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PRECAUTIONS

PRECAUTIONS

Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT **BELT PRE-TENSIONER**"

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The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death • in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

Precautions When Using CONSULT-II

When connecting CONSULT-II to data link connector, connect them through CONSULT-II CONVERTER. CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

CHECK POINTS FOR USING CONSULT-II

- 1 Has CONSULT-II been used without connecting CONSULT-II CONVERTER on this vehicle?
- If YES, GO TO 2.
- If NO, GO TO 5.
- 2 Is there any indication other than indications relating to CAN communication system in the self-diagnosis results?
- If YES, GO TO 3. _
- If NO, GO TO 4.
- 3. Based on self-diagnosis results unrelated to CAN communication, carry out the inspection.
- 4. Malfunctions may be detected in self-diagnosis depending on control units carrying out CAN communication. Therefore, erase the self-diagnosis results.
- Diagnose CAN communication system. Refer to LAN-8, "CAN Communication Unit" . 5.

Precautions For Trouble Diagnosis CAN SYSTEM

UKS001AG

- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.
- Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

PRECAUTIONS

Precautions For Harness Repair CAN SYSTEM

• Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



• Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



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System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

Go to CAN system, when selecting your CAN system type from the following table.

Body type		Truck													
Axle		2WD 4WD													
Engine		VK56DE													
Transmission								A/T							
Brake control		ABS VDC ABS VDC							VDC						
Electronic locking rear differential										×	×	×			
Automatic drive positioner		×	×		×	×		×	×		×	×		×	×
Navigation system			×			×			×			×			×
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CAN system trouble diagnosis	<u>LAN</u> -24	<u>LAN</u> -50	<u>LAN</u> <u>-79</u>	<u>LAN</u> -112	<u>LAN</u> <u>-</u> <u>140</u>	<u>LAN</u> <u>-</u> <u>170</u>	<u>LAN</u> <u>-</u> <u>204</u>	LAN <u>-</u> 232	LAN <u>-</u> 262	<u>LAN</u> <u>-</u> 296	LAN <u>-</u> 326	LAN <u>-</u> 360	<u>LAN</u> <u>-</u> <u>398</u>	<u>LAN</u> <u>-</u> 427	<u>LAN</u> <u>-</u> 459

 \times : Applicable

TYPE 1/TYPE 2/TYPE 3 System diagram

Type 1



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Input/output signal chart

T: Transmit R: Receive ABS actua-Driver Combi-Display Front tor and seat IPDM ECM TCM Signals nation control BCM air conelectric control E/R meter unit trol unit unit (control unit) Т R R R R Engine speed signal Т R Engine status signal R Т R R R Engine coolant temperature signal R т A/T self-diagnosis signal Т Accelerator pedal position signal R R Т Closed throttle position signal R Т Wide open throttle position signal R Battery voltage signal т R R Т Key switch signal т R R Ignition switch signal

Revision: April 2004

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Signals	ECM	тсм	Driver seat control unit	Combi- nation meter	Display control unit	BCM	Front air con- trol	ABS actua- tor and electric unit (control unit)	IPDM E/R
P range signal		Т	R						
Stop lamp switch signal		R		Т					
Fuel consumption monitor signal	Т			R T	R				
Turbine revolution signal	R	Т							 I
Output shaft revolution signal	R	Т							
A/C switch signal	R					Т			
A/C compressor request signal	Т						R		R
Blower fan motor switch signal	R					Т	R		
					Т		R		
A/C switch/indicator signal					R		Т		
Cooling fan speed request signal	Т						R		R
Position light request signal				R		Т			R
Low beam request signal						Т			R
Low beam status signal	R								Т
High beam request signal				R		Т			R
High beam status signal	R								Т
Front fog light request signal						Т			R
Day time running light request signal				R		Т			R
				R			R	Т	
Vehicle speed signal	R	R	R	Т	R	R	R		
Sleep wake up signal			R	R		Т			R
Door switch signal			R	R	R	Т			R
Turn indicator signal				R		Т			
Key fob ID signal			R			Т			
Key fob door unlock signal			R			Т			
Buzzer output signal				R		Т			
Fuel level sensor signal	R			Т					
Fuel level low warning signal				Т	R				
ASCD SET lamp signal	Т			R					
ASCD CRUISE lamp signal	Т			R					
Malfunction indicator lamp signal	Т			R					
Front wiper request signal						Т			R
Front wiper stop position signal						R			Т
Theft warning horn request signal						Т			R
Horn chirp signal						Т			R
ABS warning lamp signal				R				Т	
Brake warning lamp signal				R				Т	
SLIP indicator lamp signal				R				Т	

Signals	ECM	ТСМ	Driver seat control unit	Combi- nation meter	Display control unit	BCM	Front air con- trol	ABS actua- tor and electric unit (control unit)	IPDM E/R
System setting signal			R		Т				
			Т		R				
Distance to empty signal				Т	R				
ASCD operation signal	Т	R							
ASCD OD cancel request	Т	R							
A/T CHECK indicator lamp signal		Т		R					
A/T position indicator lamp signal		Т		R					
Tire pressure signal				R		Т			
Tire pressure data signal					R	Т			
1st position switch signal ^{*1}		R		Т					
4th position switch signal ^{*1}		R		Т					
Manual mode switch signal ^{*2}		R		Т					
Not manual mode switch signal ^{*2}		R		Т					
Manual mode shift up signal ^{*2}		R		Т					
Manual mode shift down signal ^{*2}		R		Т					
Tow mode switch signal		R		Т					
A/T fluid temperature sensor signal		Т		R					

*1: Floor shift model only.

*2: Column shift model only.

TYPE 4/TYPE 5/TYPE 6

System diagram

• Type 4



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Input/output signal chart

T: Transmit R: Receive

[CAN]

Signals	ECM	ТСМ	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Steer- ing angle sensor	Front air control	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
Engine speed signal	Т	R		R	R				R	
Engine status signal	Т					R		R		
Engine coolant temperature signal	Т			R				R		
A/T self-diagnosis signal	R	Т								
Accelerator pedal position signal	Т	R							R	
Closed throttle position signal	Т	R								
Wide open throttle position signal	Т	R								
Battery voltage signal	Т	R								
Key switch signal			R			Т				

Revision: April 2004

Signals	ECM	ТСМ	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Steer- ing angle sensor	Front air control	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	A
Ignition switch signal			R			Т				R	С
P range signal		Т	R								
Stop lamp switch signal		R		Т							
Fuel consumption monitor signal	Т			R T	R						D
Turbine revolution signal	R	т									Е
Output shaft revolution signal	R	Т									
A/C switch signal	R					Т					
A/C compressor request signal	Т							R		R	F
Blower fan motor switch signal	R					Т		R			
					т			R			C
A/C switch/indicator signal					R			Т			G
Cooling fan speed request signal	т							R		R	
Position light request signal				R		Т				R	\vdash
Low beam request signal						т				R	
Low beam status signal	R									Т	
High beam request signal				R		Т				R	1
High beam status signal	R									Т	
Front fog light request signal						Т				R	J
Day time running light request signal				R		Т				R	
				R				R	Т		
Vehicle speed signal	R	R	R	т	R	R		R			.A
Sleep wake up signal			R	R		Т				R	
Door switch signal			R	R	R	Т				R	L
Turn indicator signal				R		Т					
Key fob ID signal			R			Т					
Key fob door unlock signal			R			т					N
Buzzer output signal				R		Т					
Fuel level sensor signal	R			Т							
Fuel level low warning signal				Т	R						
ASCD SET lamp signal	Т			R							
ASCD CRUISE lamp signal	т			R							
Malfunction indicator lamp signal	Т			R							
Front wiper request signal						Т				R	
Front wiper stop position signal						R				Т	
Theft warning horn request signal						Т				R	
Horn chirp signal						Т				R	
Steering angle sensor signal							Т		R		
ABS warning lamp signal				R					Т		
VDC OFF indicator lamp signal				R					Т		

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Signals	ECM	ТСМ	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Steer- ing angle sensor	Front air control	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
SLIP indicator lamp signal				R					Т	
Brake warning lamp signal				R					Т	
System setting signal			R		Т					
System setting signal			Т		R					
Distance to empty signal				Т	R					
ASCD operation signal	Т	R								
ASCD OD cancel request	Т	R								
A/T CHECK indicator lamp signal		Т		R						
A/T position indicator lamp signal		Т		R						
Tire pressure signal				R		Т				
Tire pressure data signal					R	Т				
1st position switch signal ^{*1}		R		Т						
4th position switch signal ^{*1}		R		Т						
Manual mode switch signal ^{*2}		R		Т						
Not manual mode switch signal ^{*2}		R		Т						
Manual mode shift up signal ^{*2}		R		Т						
Manual mode shift down signal ^{*2}		R		Т						
Tow mode switch signal		R		Т						
A/T fluid temperature sensor signal		Т		R						

*1: Floor shift model only.

*2: Column shift model only.

TYPE 7/TYPE 8/TYPE 9

System diagram

• Type 7





Input/output signal chart

T: Transmit R: Receive ABS actua-Driver Dis-Transtor and Comseat play Front fer elec-IPDM bina-ECM TCM BCM Signals conconair contric tion E/R trol trol control trol unit meter unit unit unit (control unit) R Т A/T self-diagnosis signal R Т Stop lamp switch signal R Т Battery voltage signal Т R Key switch signal R Т т R Ignition switch signal R R P range signal Т R Closed throttle position signal Т т R Wide open throttle position signal

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Signals	ECM	ТСМ	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Front air control	Trans- fer con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
Engine speed signal	Т	R		R	R			R	R	
Engine status signal	Т					R	R			
Engine coolant temperature signal	Т			R			R			
Accelerator pedal position signal	Т	R							R	
Fuel consumption monitor signal	Т			R T	R					
Turbine revolution signal	R	т								
Output shaft revolution signal	R	Т								
A/C switch signal	R	-				т				
A/C compressor request signal	Т						R			R
Blower fan motor switch signal	R					т	R			
					Т		R			
A/C switch/indicator signal					R		т			
Cooling fan speed request signal	Т						R			R
Position light request signal				R		Т				R
Low beam request signal						Т				R
Low beam status signal	R									Т
High beam request signal				R		т				R
High beam status signal	R									Т
Front fog light request signal						Т				R
Day time running light request signal				R		Т				R
Vehicle speed signal	R	R	R	R T	R	R	R R	R	Т	
Sleep wake up signal			R	R		Т				R
Door switch signal			R	R	R	т				R
Key fob ID signal			R			т				
Key fob door unlock signal			R			т				
Buzzer output signal				R		т				
Fuel level sensor signal	R			Т						
ASCD SET lamp signal	Т			R						
ASCD CRUISE lamp signal	Т			R						
Malfunction indicator lamp signal	Т			R						
Fuel level low warning signal				Т	R					
Front wiper request signal						Т				R
Front wiper stop position signal						R				Т
Theft warning horn request signal						Т				R
Horn chirp signal						Т				R
ABS warning lamp signal				R					Т	
SLIP indicator lamp signal				R					т	

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Signals	ECM	ТСМ	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Front air control	Trans- fer con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	A B C
Brake warning lamp signal				R					Т		
System setting signal			R		Т						
System setting signal			Т		R						D
Distance to empty signal				Т	R						
ASCD operation signal	Т	R									F
ASCD OD cancel request	Т	R									
A/T CHECK indicator lamp signal		Т		R							
A/T position indicator lamp signal		Т		R				R			F
Tire pressure signal				R		Т					
Tire pressure data signal					R	Т					0
1st position switch signal ^{*1}		R		Т							G
4th position switch signal ^{*1}		R		Т							
Manual mode switch signal ^{*2}		R		Т							Н
Not manual mode switch signal ^{*2}		R		Т							
Manual mode shift up signal ^{*2}		R		Т							
Manual mode shift down signal ^{*2}		R		Т							
Tow mode switch signal		R		Т							J
A/T fluid temperature sensor signal		Т		R							0
4WD shift switch signal	R							Т			
*1: Floor shift model only.											LAN

*1: Floor shift model only.

*2: Column shift model only.

TYPE 10/TYPE 11/TYPE 12 System diagram

Type 10 •



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Revision: April 2004



Input/output signal chart

тсм

ECM

Differential

control unit

Driver seat

control unit

T: Transmit R: Receive

IPDM E/R

SKIB0584E

Transfer

control unit

BCM

Signals	ECM	тсм	Differ- ential lock con- trol unit	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Front air con- trol	Transf er con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
A/T self-diagnosis signal	R	Т									
Ston Jamp switch signal		R			Т						
Stop lamp switch signal									R	Т	
Battery voltage signal	Т	R									
Key switch signal				R			Т				
Ignition switch signal				R			Т				R
P range signal		Т		R							
Closed throttle position signal	Т	R									

Combination

meter

Display

control unit

Revision: April 2004

Signals	ECM	тсм	Differ- ential lock con- trol unit	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	всм	Front air con- trol	Transf er con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R	A B C
Wide open throttle position signal	Т	R										
Engine speed signal	Т	R			R	R			R	R		D
Engine status signal	Т						R	R				
Engine coolant temperature signal	Т				R			R				
Accelerator pedal position signal	Т	R								R		E
Fuel consumption monitor signal	Т				R T	R						_
Turbine revolution signal	R	Т										F
Output shaft revolution signal	R	Т										
A/C switch signal	R						Т					G
A/C compressor request signal	Т							R			R	
Blower fan motor switch signal	R						Т	R				
A/C switch/indicator signal						T		R T				Н
Cooling fan speed request signal	т							R			R	I
Position light request signal					R		т				R	
l ow beam request signal							Т				R	
l ow beam status signal	R										т	J
High beam request signal					R		т				R	
High beam status signal	R										Т	ΙΔΝ
Front fog light request signal							Т				R	
Day time running light request signal					R		Т				R	
, , , , , , , , , , , , , , , , , , , ,			R		R			R	R	Т		L
Vehicle speed signal	R	R		R	Т	R	R	R				
Sleep wake up signal				R	R		Т				R	Ъ.Л
Door switch signal				R	R	R	Т				R	IVI
Key fob ID signal				R			Т					
Key fob door unlock signal				R			Т					
Buzzer output signal					R		Т					
Fuel level sensor signal	R				Т							
ASCD SET lamp signal	Т				R							
ASCD CRUISE lamp signal	Т				R							
Malfunction indicator lamp signal	Т				R							
Fuel level low warning signal					Т	R						
Front wiper request signal							Т				R	
Front wiper stop position signal							R				Т	
Theft warning horn request signal							Т				R	
Horn chirp signal							Т				R	

Signals	ECM	тсм	Differ- ential lock con- trol unit	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Front air con- trol	Transf er con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
ABS warning lamp signal					R					Т	
SLIP indicator lamp signal					R					Т	
Brake warning lamp signal					R					Т	
System setting signal				R		Т					
				Т		R					
Distance to empty signal					Т	R					
ASCD operation signal	Т	R									
ASCD OD cancel request	Т	R									
A/T CHECK indicator lamp signal		Т			R						
A/T position indicator lamp signal		Т			R				R		
Tire pressure signal					R		Т				
Tire pressure data signal						R	Т				
1st position switch signal ^{*1}		R			Т						
4th position switch signal ^{*1}		R			Т						
Manual mode switch signal ^{*2}		R			Т						
Not manual mode switch signal ^{*2}		R			Т						
Manual mode shift up signal ^{*2}		R			Т						
Manual mode shift down signal ^{*2}		R			Т						
Tow mode switch signal		R			Т						
A/T fluid temperature sensor signal		Т			R						
4WD shift switch signal	R		R						Т		

*1: Floor shift model only.

*2: Column shift model only.

TYPE 13/TYPE 14/TYPE 15 System diagram





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Input/output signal chart

[CAN]

									T: Trans	smit R:	Receive
Signals	ECM	тсм	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	всм	Steer- ing angle sen- sor	Front air con- trol	Trans fer con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
A/T self-diagnosis signal	R	Т									
Stop lamp switch signal		R		Т					R	т	
Battery voltage signal	Т	R									
Key switch signal			R			Т					
Ignition switch signal			R			Т					R
P range signal		Т	R								
Closed throttle position signal	Т	R									
Wide open throttle position signal	Т	R									
Engine speed signal	Т	R		R	R				R	R	
Engine status signal	Т					R		R			
Engine coolant temperature signal	Т			R				R			
Accelerator pedal position signal	Т	R								R	
Fuel consumption monitor signal	Т			R T	R						
Turbine revolution signal	R	т		-							
Output shaft revolution signal	R	т									
A/C switch signal	R					Т					
A/C compressor request signal	Т							R			R
Blower fan motor switch signal	R					Т		R			
A/C switch/indicator signal					T R			R T			
Cooling fan speed request signal	Т							R			R
Position light request signal				R		Т					R
Low beam request signal						Т					R
Low beam status signal	R										Т
High beam request signal				R		Т					R
High beam status signal	R										Т
Front fog light request signal						Т					R
Day time running light request signal				R		Т					R
				R				R	R	Т	
venicle speed signal	R	R	R	Т	R	R		R			
Sleep wake up signal			R	R		Т					R
Door switch signal			R	R	R	Т					R
Key fob ID signal			R			Т					
Key fob door unlock signal			R			Т					
Buzzer output signal				R		Т					

Revision: April 2004

Signals	ECM	тсм	Driver seat con- trol unit	Com- bina- tion meter	Dis- play con- trol unit	BCM	Steer- ing angle sen- sor	Front air con- trol	Trans fer con- trol unit	ABS actua- tor and elec- tric unit (con- trol unit)	IPDM E/R
Fuel level sensor signal	R			Т							
ASCD SET lamp signal	Т			R							
ASCD CRUISE lamp signal	Т			R							
Malfunction indicator lamp signal	Т			R							
Fuel level low warning signal				Т	R						
Front wiper request signal						Т					R
Front wiper stop position signal						R					Т
Theft warning horn request signal						Т					R
Horn chirp signal						Т					R
Steering angle sensor signal							Т			R	
ABS warning lamp signal				R						Т	
VDC OFF indicator lamp signal				R						Т	
SLIP indicator lamp signal				R						Т	
Brake warning lamp signal				R						Т	
System setting signal			R T		T R						
Distance to empty signal				Т	R						
ASCD operation signal	Т	R									
ASCD OD cancel request	Т	R									
A/T CHECK indicator lamp signal		Т		R							
A/T position indicator lamp signal		Т		R					R		
Tire pressure signal				R		Т					
Tire pressure data signal					R	Т					
1st position switch signal ^{*1}		R		Т							
4th position switch signal ^{*1}		R		Т							
Manual mode switch signal ^{*2}		R		Т							
Not manual mode switch signal ^{*2}		R		Т							
Manual mode shift up signal ^{*2}		R		Т							
Manual mode shift down signal ^{*2}		R		Т							
Tow mode switch signal		R		Т							
A/T fluid temperature sensor signal		Т		R							
4WD shift switch signal	R								Т		

*1: Floor shift model only.

*2: Column shift model only.

System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



[CAN]

UKS001AK

UKS001AL

Schematic



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BKWA0130E



[CAN]



BKWA0131E

LAN-CAN-03

DATA LINE



BKWA0020E

[CAN]

Work Flow

UKS001AO

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1. When there are no indications of "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	всм	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS	
	WORK SUPPORT	DTC RESULTS TIME	
	SELF-DIAG RESULTS		
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		F.F.DATA	
	Scroll Down	ERASE PRINT	
	BACK LIGHT COPY	MODE BACK LIGHT COPY	

Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "BCM", "ABS" and "IPDM E/R" 3. displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	1	CAN DIAG SU	PPORT I	MNTR	
	WORK SUPPORT		LINC	PR	SNT	
	SELF-DIAG RESULTS		INITIAL DIAG	C)K	
	DATA MONITOR		TCM	C	ж	
	DATA MONITOR (SPEC)		VDC/TCS/ABS	C)K	
	CAN DIAG SUPPORT MNTR		ICC	UNF	<wn< td=""><td></td></wn<>	
	ACTIVE TEST		BCM/SEC IPDM E/R	C C)К Ж	
			AWD/4WD/e4WD	UN	KWN	
	Scroll Down		PRINT		Scroll Down	
	BACK LIGHT COPY		MODE BACK	LIGHT	COPY	DKIA 00 40 F

- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to LAN-30, "CHECK SHEET" .
- 5. Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to LAN-30, "CHECK SHEET" .

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual. So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to LAN-32, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial	Transmit	Receive diagnosis							
	I EW SCICCII	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R			
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN			
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_			
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN			
ABS	-	NG	UNKWN	UNKWN	_	-	-	—			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_			

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

PKIA9326E



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-42, "Circuit Check Between TCM and Data Link Connector"</u>.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial	Transmit	Receive diagnosis						
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R		
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	_		
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN		
ABS	_	NG	UNKWN	UNKWN	_	-	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_		



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Case 2

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-43</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

			CAN DIAG SUPPORT MNTR								
SELECT SYS	TFM screen	Initial	Tranomit	Receive diagnosis							
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R			
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN			
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	_			
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN			
ABS	_	NG	UNKWN	UNKVN	_	_	_	_			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_			



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Case 3

Check ECM circuit. Refer to LAN-44, "ECM Circuit Check" .

			CAN DIAG SUPPORT MNTR						
SELECT SYSTEM screen		Initial	Transmit		Receive diagnosis				
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNK	UNKWN	UNKWN	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	-	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	
ABS	_	NG	UNKWN	UNKWN	_	_	-	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	



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Case 4

Check TCM circuit. Refer to LAN-45, "TCM Circuit Check" .

				CAN DIAG SUPPORT MNTR							
SELECT S	SELECT SYSTEM screen		Transmit	Receive diagnosis							
SELECT S	TOTEM SCIECT	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R			
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN			
A/T	-	NG	UNKWN	UNKWN	_	UNK	-	-			
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN			
ABS	_	NG	UNKWN	UNKWN	-	_	-	-			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_			



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PKIA9344E

Case 5

Check combination meter circuit. Refer to LAN-45, "Combination Meter Circuit Check" .

				CAN DIAG SUPPORT MNTR					
SELECT SYSTEM screen		Initial Transmit diagnosis diagnosis	Receive diagnosis						
			diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	
ABS	_	NG	UNKWN	UNKWN	_	_	-	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_		UNKWN	_	


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Case 6

Check BCM circuit. Refer to LAN-46, "BCM Circuit Check" .

				CAN DI	AG SUPPORT	r mntr		
	STEM screen	Initial	Transmit	Receive diagnosis				
322201 31	STEW SCIECH	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKAVN	_



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Case 7

Check data link connector circuit. Refer to LAN-46, "Data Link Connector Circuit Check" .

			CAN DIAG SUPPORT MNTR					
SELECT SYST	EM screen	Initial	Tranamit		Re	eceive diagnos	sis	
SEELOT STOT	EW SCICCH	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	_
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN
ABS	_	NG	UNKWN	UNKWN	_	_	-	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_



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Case 8

А Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-47, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

				CAN DI	AG SUPPOR	T MNTR			
SELECT SVS	TEM screen	Initial	Tronomit	Receive diagnosis					
SELECT OF S	EW Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	
ABS	—	v	UNKWN	UNKWN	_	_	_	_	
IPDM E/R	No indication		UNKWN	UNKWN	_	_	UNKWN	_	



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Case 9

Check IPDM E/R circuit. Refer to LAN-47, "IPDM E/R Circuit Check" .

				CAN DIAG SUPPORT MNTR					
SELECT SYSTEM screen		Initial	Transmit		Re	eceive diagnos	sis		
SEELOT STOT	EW SCICCH	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNK	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	_	
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	
ABS	_	NG	UNKWN	UNKWN	_	_	_	_	
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	UNKWN	-	



Case 10

Check CAN communication circuit. Refer to LAN-48, "CAN Communication Circuit Check" .

			CAN DIAG SUPPORT MNTR					
SELECT SY	STEM screen	Initial	Tranamit		R	eceive diagnos	sis	
SELECT OF	OTEN SCICCI	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKAWN	UNKWN	UNKIWN	UNK
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN
ABS	_	×	UNKWN	UNKWN	-	-	_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_

Case 11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-49</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

				CAN D	AG SUPPOR	T MNTR			
SELECT SV	STEM screen	Initial	Tranamit	Receive diagnosis					
OLLEOF OR		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	_	
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	
ABS	_	NG	UNKWN	UNKWN	-	-	-	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	

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Case 12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-49</u>, "IPDM E/R Ignition Relay Circuit Check".

			CAN DIAG SUPPORT MNTR						
SELECT SV	STEM screen	Initial	Transmit	Receive diagnosis					
SELECT OF	or Emiscreen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	
ABS	-	NG	UNKWN	UNKWN	_	_	-	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	

Circuit Check Between TCM and Data Link Connector 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E34
- Harness connector B40
- Harness connector B69
- Harness connector M40
- OK or NG
- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)
- : Continuity should exist. : Continuity should exist.

- OK or NG
- OK >> GO TO 3. NG >> Repair harness.



[CAN]



- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-43

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector M31.
- 2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).
 - 6 (W) 31G (W) 14 (R) - 42G (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.



- 1. Disconnect IPDM E/R connector.
- Check continuity between harness connector E152 terminals 2. 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).
 - 31G (W) 39 (W) 42G (R) - 40 (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-29, "Work Flow" .
- NG >> Repair harness.

ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check following terminals and connectors for damage, bend and loose connection (control module side 3. and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.







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- Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R)

: **Approx. 54 - 66**Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



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BCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-25, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

: Approx. 54 - 66Ω

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

OK or NG

- OK >> Diagnose again. Refer to LAN-29, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.



ABS Actuator and Electric Unit (Control Unit) Circuit Check UKS001AX Е **1. CHECK CONNECTOR** Turn ignition switch OFF. 1. F 2. Disconnect the negative battery terminal. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose 3. connection (control unit side and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. Н 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect ABS actuator and electric unit (control unit) connector. 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R). BAT 11 (W) - 15 (R) : Approx. 54 - 66 Ω ABS actuator and electric unit OK or NG (control unit) connector OK >> Replace ABS actuator and electric unit (control unit). C/UNIT O CONNECTOR LAN NG >> Repair harness between ABS actuator and electric unit 11 15 (control unit) and harness connector E152. SKIA6872E **IPDM E/R Circuit Check** UKS001AY Μ **1. CHECK CONNECTOR**

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 108 - 132Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- A/T assembly
- Combination meter
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

- OK >> GO TO 2.
- NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Continuity should not exist.

OK or NG

- OK >> GO TO 3.
- NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

- 6 (W) Ground
- : Continuity should not exist.

14 (R) - Ground

: Continuity should not exist.

OK or NG

- OK >> Check ECM and IPDM E/R. Refer to LAN-49, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" .
- NG >> Repair harness.

Revision: April 2004

IPDM E/R Ignition Relay Circuit Check

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START" .

Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



Data link connector

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System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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Schematic



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BKWA0133E

LAN-CAN-06

DATA LINE



BKWA0033E

Work Flow

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1. When there are no indications of "AUTO DRIVE POS.", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM		
		ENGINE		
	CONSULT- II	A/T		
		ABS		
		AIR BAG		
	ENGINE	BCM		
	START (NISSAN BASED VHCL)	METER A/C AMP		
	START (RENAULT BASED VHCL)			
	SUB MODE			
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E	

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS
(WORK SUPPORT	DTC RESULTS TIME
	SELF-DIAG RESULTS	
	DATA MONITOR	
	DATA MONITOR (SPEC)	
	CAN DIAG SUPPORT MNTR	
	ACTIVE TEST	
		F.F.DATA
	Scroll Down	ERASE PRINT
	BACK LIGHT COPY	MODE BACK LIGHT COPY

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	,	CAN DIAG SU	PPORT MNTR		
(Example)			ENG	INE		
	WORK SUPPORT			PRSNT		
	SELF-DIAG RESULTS		INITIAL DIAG	ок		
			TRANSMIT DIAG	ОК		
	DATA MONITOR		TCM	ОК		
	DATA MONITOB (SPEC)		VDC/TCS/ABS	ОК		
	B/W/World Cit (cit 20)		METER/M&A	ок		
	CAN DIAG SUPPORT MNTR		ICC	UNKWN		
			BCM/SEC	ок		
	ACTIVE TEST		IPDM E/R	ОК		
			AWD/4WD/e4WD	UNKWN		
-	Scroll Down		PRINT	Scroll Down		
	BACK LIGHT COPY		MODE BACK	LIGHT COPY	PKIA8343E	

- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-56</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>56, "CHECK SHEET"</u>.

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-58, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>.

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

				CAN DIAG SUPPORT MNTR					
	EMiscreen	Initial	T	Receive diagnosis					
SELECT STOT	LW Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	
ABS	_	NG	UNKWN	UNKWN	_	_	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

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А В Attach copy of Attach copy of Attach copy of ENGINE A/T AUTO DRIVE POS. SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS С D Ε F Attach copy of Attach copy of Attach copy of BCM ABS IPDM E/R SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS Н Attach copy of Attach copy of Attach copy of ENGINÉ AUTO DRIVE POS. A/T CAN DIAG SUPPORT CAN DIAG SUPPORT CAN DIAG SUPPORT MNTR MNTR MNTR LAN L Μ Attach copy of Attach copy of Attach copy of BCM ABS IPDM E/R CAN DIAG SUPPORT CAN DIAG SUPPORT CAN DIAG SUPPORT MNTR MNTR MNTR

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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-70, "Circuit Check Between TCM and</u> <u>Driver Seat Control Unit"</u>.

				CAN D	AG SUPPOR	T MNTR		
	EMscreen	Initial	Transit		R	eceive diagno	sis	
SELECT STOT		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN
ABS	_	NG	UNKWN	UNKWN	_	_	_	_
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	_

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Case 2

Check harness between driver seat control unit and data link connector. Refer to <u>LAN-71, "Circuit Check</u> <u>A</u> <u>Between Driver Seat Control Unit and Data Link Connector"</u>.

		CAN DIAG SUPPORT MNTR								
	EMscreen	Initial	Treesesit		R	eceive diagnos	sis			
SELECT STOP	LW SCIECT	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	-	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN		
ABS	-	NG	UNKWN	UNKWN	_	-	-	-		
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	_		



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Case 3

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-72</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

		CAN DIAG SUPPORT MNTR								
	EMscreen	Initial	Treesesit		Re	eceive diagnos	sis			
SELECT STOP	LIVISCIEET	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	_	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN		
ABS	-	NG	UNKWN	UNKWN	_	_	-	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_		



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Case 4

Check ECM circuit. Refer to LAN-73, "ECM Circuit Check" .

		CAN DIAG SUPPORT MNTR								
	EMiscreen	Initial	Trenewit	Receive diagnosis						
SELECT STOT	LW SCIEEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R		
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNK	UNKWN		
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	-	—		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-	UNKWN		
ABS	_	NG	UNKWN	UNKWN	_	-	-	_		
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_		



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Case 5

Check TCM circuit. Refer to LAN-73, "TCM Circuit Check" .

				CAN D	IAG SUPPOR	I MNTR			
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis					
	EW BOICEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	
всм	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	UNKWN	
ABS	_	NG	UNKWN	UNKWN	-	_	-	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	



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Case 6

Check driver seat control unit circuit. Refer to LAN-74, "Driver Seat Control Unit Circuit Check" .

				CAN D	AG SUPPOR	T MNTR			
	EMiscreen	Initial	Treastit	Receive diagnosis					
SELECT STOP	Livi Screen	diagnosis diag	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	-	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	
ABS	_	NG	UNKWN	UNKWN	_	_	-	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	



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Case 7

Check combination meter circuit. Refer to LAN-74, "Combination Meter Circuit Check" .

				CAN DI	AG SUPPORT	r mntr			
SELECT SYST	FM screen	Initial	Transmit	Receive diagnosis					
	EW BOICEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	
ABS	_	NG	UNKWN	UNKWN	_	_	-	_	
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	



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Case 8

Check BCM circuit. Refer to LAN-75, "BCM Circuit Check" .

				CAN D	AG SUPPOR	F MNTR			
	EMiscreen	Initial	Trenewit	Receive diagnosis					
OLLEON ON ON	LW Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	
ABS	_	NG	UNKWN	UNKWN	_	_	-	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	



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Case 9

Check data link connector circuit. Refer to LAN-75, "Data Link Connector Circuit Check" .

				CAN DI	AG SUPPORT	r mntr			
SELECT SYST	EM screen	Initial	Tranamit	Receive diagnosis					
	EW BOICEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	-	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	
ABS	_	NG	UNKWN	UNKWN	_	_	-	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	



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Case 10

А Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-76, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

		CAN DIAG SUPPORT MNTR								
	EMscreen	Initial	Treast	Receive diagnosis						
SELECT STOT		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	IPDM E/R		
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN		
ABS	-	N	UNKWN	UNKWN	_	-	-	-		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_		



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Case 11

Check IPDM E/R circuit. Refer to LAN-76, "IPDM E/R Circuit Check" .

		CAN DIAG SUPPORT MNTR							
	EM screen	Initial	Trenewit	Receive diagnosis					
OLLEOT OT OT		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNK	
ABS	_	NG	UNKWN	UNKWN	_	_	-	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	



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Case 12

Check CAN communication circuit. Refer to LAN-77, "CAN Communication Circuit Check" .

		CAN DIAG SUPPORT MNTR								
	EMiscreen	Initial	Transmit diagnosis	Receive diagnosis						
SELECT STOL	LIVISCIECI	diagnosis		ECM	ТСМ	METER /M&A	BCM/SEC	IPDM E/R		
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	_	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN		
ABS	_	V	UNKWN	UNKWN	_	_	-	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_		

Case 13

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-77</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

		CAN DIAG SUPPORT MNTR								
SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	тсм	METER /M&A	BCM/SEC	IPDM E/R		
ENGINE	-	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	—		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN		
ABS	_	NG	UNKWN	UNKWN	_	_	-	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_		

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Case 14

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-77, "IPDM E/R Ignition Relay Circuit Check".

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R		
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	_	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_		
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN		
ABS	-	NG	UNKWN	UNKWN	-	-	-	-		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_		

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

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1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12
 - (W), 11 (R).
 - 3 (W) 12 (W)

8 (R) - 11 (R)

: Continuity should exist. : Continuity should exist.

OK or NG

- >> GO TO 3. OK NG
 - >> Repair harness.





OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

- 51J (W) 6 (W) 52J (R) - 14 (R)
- : Continuity should exist. : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-55, "Work Flow".
- NG >> Repair harness.



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Circuit Check Between Data Link Connector and IPDM E/R

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector M31.
- Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).
 - 6 (W) 31G (W) 14 (R) - 42G (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).
 - 31G (W) 39 (W) 42G (R) - 40 (R)

: Continuity should exist.

: Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-55, "Work Flow" .

NG >> Repair harness.


		[CAN]
ËC	CM Circuit Check	UKS001BA
1.	CHECK CONNECTOR	
1. 2. 3. - <u>-</u> <u>OK</u> 0 N	Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (control mo and harness side). ECM connector Harness connector E19 Harness connector F33 or NG K >> GO TO 2. G >> Repair terminal or connector.	dule side
<u> </u>		
1. 2.	Disconnect ECM connector. Check resistance between ECM harness connector E16 termi- nals 94 (W) and 86 (R).	1
_	94 (W) - 86 (R) : Approx. 108 - 132Ω ECM connector	:
<u>OK</u> O N	or NG K >> Replace ECM. G >> Repair harness between ECM and A/T assembly. 86 94 Image: Construction of the system of the syst]
тс 1.	CHECK CONNECTOR	PKIA0816E UKS001BB
1.	Turn ignition switch OFF.	
2. 3	Disconnect the negative battery terminal.	ol module
у. Эк	side and harness side).	
O	K >> GO TO 2.	
2.	CHECK HARNESS FOR OPEN CIRCUIT	
1	Disconnect A/T assembly connector	
2.	Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).	
	3 (W) - 8 (R) : Approx. 54 - 66Ω A/T assembly connector	
<u>OK</u> 0 N	or NG K >> Replace A/T assembly. G >> Repair harness between A/T assembly and harness connector F33.	0//00005

Driver Seat Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side).
- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace driver seat control unit.
- NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



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ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace ABS actuator and electric unit (control unit).
- NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: **Approx. 108 - 132**Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



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1. CHECK CONNECTOR		
1. Turn ignition switch OFF	-	
2. Disconnect the negative	battery terminal.	
3. Disconnect the following nection, looseness or da	module and control unit connectors and amage.	check terminals for deformation, discon-
– ECM		
 A/T assembly 		
 Driver seat control unit 		
 Combination meter 		
– BCM		
 Front air control 		
 ABS actuator and electr 	ic unit (control unit)	
– IPDM E/R		
OK or NG		
OK >> GO TO 2.		
NG >> Repair or replace	e as necessary.	
2. CHECK HARNESS FOR	R SHORT CIRCUIT	
With all module and contro continuity between data link (R).	ol unit connectors disconnected, check connector M22 terminals 6 (W) and 14	T.S.
6 (W) - 14 (R)	: Continuity should not exist.	Data link connector
OK or NG	,	
NG >> Repair harness.		
		PKIA2077E
3. CHECK HARNESS FOR	R SHORT CIRCUIT	
Check continuity between d 14 (R) and ground.	ata link connector M22 terminals 6 (W),	
6 (W) - Ground	: Continuity should not exist.	Data link connector
14 (R) - Ground	: Continuity should not exist.	

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-78, "ECM/ **IPDM E/R INTERNAL CIRCUIT INSPECTION**". NG





IPDM E/R Ignition Relay Circuit Check

CAN Communication Circuit Check

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Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" . .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON • AND/OR START" .

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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 122
IPDM E/R	39 - 40	100 - 132



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System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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DATA LINE

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Work Flow

1. When there are no indications of "AUTO DRIVE POS.", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	всм	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

 Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT D	AG MOI	DE	SELF-DIAG RESULTS
	WORK SI	UPPORT	-	DTC RESULTS TIME
	SELF-DIAG	RESUL	TS	
	DATA MO	ONITOR		
	DATA MONI	TOR (SP	EC)	
	CAN DIAG SU	PPORTI	MNTR	
	ACTIVE	ETEST		
				F.F.DATA
		Scroll	Down	ERASE PRINT
	BACK	LIGHT	COPY	MODE BACK LIGHT COPY

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.



- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-86, "CHECK SHEET"</u>.
- 5. Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-86, "CHECK SHEET"</u>.

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. Check CAN communication line of the navigation system. Refer to <u>AV-149</u>, "CAN Communication Line <u>Check"</u>.
- 7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to <u>LAN-86</u>, <u>"CHECK SHEET"</u>.

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8.	Mark the "NG" or "UNKWN" item of the check sheet table with "v" from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to LAN-86, "CHECK SHEET".	А
	NOTE: If "NG" is displayed on "CAN COMM" as "CAN DIAG SUPPORT MONITOR" for the diagnosed control unit, replace the control unit. Refer to <u>AV-149</u> , "CAN Communication Line Check".	В
9.	According to the check sheet results (example), start inspection. Refer to <u>LAN-88, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u> .	_
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CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" for the diagnosed control unit, replace the control unit.

				C	CAN DIAG SU	PORT MNT	٦		
SELECT SYST	EM screen	Initial	Transmit			Receive	diagnosis		
		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	-	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	UNKWN
VT	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	_
UTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_
isplay control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC
СМ	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	-	UNKWN
BS	_	NG	UNKWN	UNKWN	_	-	_	_	_
PDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_
		Atta SELE	ch copy of CT SYSTEM		SE	Attach copy of ELECT SYSTE	M		
			CAN DIAG	Attach co display cont SUPPORT MC	py of rol unit DNITOR chec	k sheet			



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" for the diagnosed control unit, replace the control unit.

Case 1

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Check harness between TCM and driver seat control unit. Refer to <u>LAN-102</u>, "Circuit Check Between TCM and Driver Seat Control Unit".

				C	AN DIAG SU	IPPORT MNT	٦		
SELECT SYST	FM screen	Initial	Tranamit			Receive	diagnosis		
	Livi Screen	diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	—	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN
ABS	-	NG	UNKWN	UNKWN	_	-	-	_	_
IPDM E/R	No indication	_	UNKWN	UNKIVN	_	-	UNKWN	_	—



Check harness between driver seat control unit and data link connector. Refer to <u>LAN-103</u>, "Circuit Check <u>A</u><u>Between Driver Seat Control Unit and Data Link Connector</u>".

				C	AN DIAG SU	PPORT MNTE	7		
SELECT SYSTEM screen		Initial	Tranamit			Receive	diagnosis		
		diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	-	UNKWN
ABS	-	NG	UNKWN	UNKWN	—	_	-		—
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	_



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Check harness between data link connector and IPDM E/R. Refer to <u>LAN-104</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

				(CAN DIAG SU	PPORT MNT	7		
SELECT SYST	EMiscreen	Initial	Tranamit	Receive diagnosis					
	LINISCICCII	diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	—	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CANORC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	_	-	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_



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Case 4

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Check ECM circuit. Refer to LAN-105, "ECM Circuit Check" .

				C	AN DIAG SU	PPORT MNT	7		
SELECT SYST	FM screen	Initial	Tranamit			Receive	diagnosis		
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	_	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	—	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN ORC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-	—	UNKWN
ABS	-	NG	UNKWN	UNKWN	—	-	-	_	_
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	_	-



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Check TCM circuit. Refer to LAN-105, "TCM Circuit Check" .

				C	AN DIAG SU	PPORT MNT	٦		
SELECT SYST	FM screen	Initial	Tranamit			Receive	diagnosis		
	Livi Screen	diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	—	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_		UNKWN	UNKWN	_	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	_	-	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_



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Case 6

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Check driver seat control unit circuit. Refer to LAN-106, "Driver Seat Control Unit Circuit Check" .

				C	CAN DIAG SU	PPORT MNT	3		
SELECT SYST	FM screen	Initial	Transmit			Receive	diagnosis		
0000010101		diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	_	-	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-



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Check combination meter circuit. Refer to LAN-106, "Combination Meter Circuit Check" .

				(CAN DIAG SU	PPORT MNT	7		
SELECT SYST	FM screen	Initial	Transmit			Receive	diagnosis		
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	—
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CANORC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	_	-	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_



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Case 8

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Check display control unit circuit. Refer to LAN-107, "Display Control Unit Circuit Check" .

				C	AN DIAG SU	IPPORT MNT	7		
SELECT SYST	FM screen	Initial	Transmit			Receive	diagnosis		
0222010101		diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_
Display control unit	_	CAN COMM	CANORC 1	CANORC 3	_	CAN ORC 5	CAN ORC 2	CAN ORC 4	CANORC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	_	-	-	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_



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Check BCM circuit. Refer to LAN-107, "BCM Circuit Check" .

				C	CAN DIAG SU	PPORT MNT	7		
SELECT SYST	FM screen	Initial	Transmit			Receive	diagnosis		
		diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	—	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKAVN	_	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CANORC 2	CAN CIRC 4	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	—	UNKWN	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	_	-	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_



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Case 10

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Check data link connector circuit. Refer to LAN-108, "Data Link Connector Circuit Check" .

				(CAN DIAG SU	IPPORT MNT	4		
SELECT SYST	FM screen	Initial	Transmit			Receive	diagnosis		
022201 0101		diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	—	-	-		—
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	-	_



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Check front air control circuit. Refer to LAN-108, "Front Air Control Circuit Check" .

				(CAN DIAG SU	PPORT MNT	3		
SELECT SYST	FM screen	Initial	Tranamit			Receive	diagnosis		
	El de de la com	diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	—
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN ORC 4	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
ABS	-	NG	UNKWN	UNKWN	_	_	-	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_
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Case 12

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Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-109</u>, "ABS Actuator and Electric Unit <u>(Control Unit) Circuit Check</u>".

				C	AN DIAG SU	PPORT MNTE	7		
SELECT SYST	FM screen	Initial	Tranamit			Receive	diagnosis		
OLLEON ONOT	EW SCICCI	diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	_	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN
ABS	-	N	UNKWN	UNKWN	_	_	-	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_



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Check IPDM E/R circuit. Refer to LAN-109, "IPDM E/R Circuit Check" .

				(AN DIAG SU	PPORT MNT	7		
SELECT SYST	FM screen	Initial	Transmit			Receive	diagnosis		
OLLEOT OTOT	Livi Screen	diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	—	Ι
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CANORC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	_	_	_	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_



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Case 14

Check CAN communication circuit. Refer to LAN-110, "CAN Communication Circuit Check" .

				(CAN DIAG SU	PPORT MNTE	7		
	EM screen	Initial	Transmit			Receive (diagnosis		
OLLEOT OT OT	LIW SCIECT	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	_	NG	UNKWN	_		UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_
Display control unit	_	CAN COMM	CAN RC 1	CANORC 3	_	CANORC 5	CANVIRC 2	CANORC 4	CAN ORC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN
ABS	_	N/A	UNKWN	UNKWN	_	_	-	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_

Case 15

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-110, "IPDM E/R Ignition Relay</u> <u>Circuit Check"</u>.

				C	AN DIAG SU	PPORT MNT	7		
SELECT SYST	FM screen	Initial	Tranomit			Receive	diagnosis		
0000010101		diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN		—
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	—	UNKWN	-		UNKWN
ABS	_	NG	UNKWN	UNKWN	—	_	Ι		_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	—

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Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-110, "IPDM E/R Ignition Relay Circuit Check" .

				(AN DIAG SU	PPORT MNTE	٦		
	EMiccroop	Le Mert	Turnet			Receive	diagnosis		
SELECT STOT		diagnosis	diagnosis	ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	—	—	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	_
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	—	UNKWN
ABS	_	NG	UNKWN	UNKWN	_	_	-	—	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12
 - (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)

: Continuity should exist. : Continuity should exist.



- OK >> GO TO 3. NG
 - >> Repair harness.

A/T assembly connector Harness connector 3 1112 8 3, 8 12, 11 Ω PKIA6831E



OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) 52J (R) - 14 (R) : Continuity should exist. : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-84, "Work Flow".

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector M31.
- Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).
 - 6 (W) 31G (W) 14 (R) - 42G (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).
 - 31G (W) 39 (W) 42G (R) - 40 (R)

: Continuity should exist.

: Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-84, "Work Flow" .

NG >> Repair harness.



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ECM Circuit C	heck		UKS001BU
1. снеск соли	ECTOR		
 Turn ignition sv Disconnect the Check following and harness side ECM connecto Harness conne Harness conne OK or NG OK >> GO TO NG >> Repair 	vitch OFF. negative battery g terminals and de). r ctor E19 ctor F33 2. terminal or conn	r terminal. connectors for damage, bend ector.	and loose connection (control module side
Z. CHECK HARN	ESS FOR OPEN		
 Disconnect EC Check resistan nals 94 (W) and 	M connector. ce between EC d 86 (R).	M harness connector E16 tern	
94 (W) - 86	(R)	: Approx. 108 - 132 Ω	ECM connector
<u>OK or NG</u> OK >> Replac NG >> Repair	e ECM. harness betwee	n ECM and A/T assembly.	ЕСМ ОСОNNECTOR 86 94 ПО П
 CHECK CONN Turn ignition sv Disconnect the Check terminal side and harne 	heck ECTOR /itch OFF. negative battery s and connector ss side).	r terminal. of A/T assembly for damage,	UKS001BV
<u>OK or NG</u> OK >> GO TO	2.		
NG >> Repair	terminal or conn	ector.	
Z. CHECK HARN	ESS FOR OPEN		
 Disconnect A/T Check resistan terminals 3 (W) 	assembly conn ce between A/T and 8 (R).	ector. assembly harness connector I	
3 (W) - 8 (R)	: Approx. 54 - 66Ω	A/T assembly connector
<u>OK or NG</u> OK >> Replac NG >> Repair connec	e A/T assembly. harness betwe tor F33.	en A/T assembly and harne	ss Q

Driver Seat Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side).
- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace driver seat control unit.
- NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



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BCM Circuit Check 1. CHECK CONNECTOR



- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

LAN-107

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-25, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: **Approx. 54 - 66**Ω

OK or NG

- OK >> Diagnose again. Refer to LAN-84, "Work Flow".
- NG >> Repair harness between data link connector and combination meter.



Front Air Control Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of front air control for damage, bend and loose connection (unit side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect front air control connector.
- 2. Check resistance between front air control harness connector M50 terminals 34 (W) and 35 (R).

34 (W) - 35 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace front air control.
- NG >> Repair harness between front air control and data link connector.



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CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect the following module and control unit connectors and check terminals for deformation, discon-3. nection, looseness or damage.
- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- **IPDM E/R**

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

- 6 (W) Ground 14 (R) - Ground
- : Continuity should not exist. : Continuity should not exist.

- OK or NG
- OK >> Check ECM and IPDM E/R. Refer to LAN-111, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" . NG
 - >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START" .

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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



Revision: April 2004

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System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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ECM







[CAN]



BKWA0137E

LAN-CAN-12

= : DATA LINE



BKWA0029E

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Work Flow

- 1. When there are no indications of "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM	
· · · /		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	всм	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS	F
	WORK SUPPORT	DTC RESULTS TIME	F
	SELF-DIAG RESULTS		
	DATA MÓNITOR		C
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		ŀ
		F.F.DATA	1
	Scroll Down	ERASE PRINT	
	BACK LIGHT COPY	MODE BACK LIGHT COPY	

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE		CAN DIAG SU	PORT MNTR	
(Example)			ENG	INE	
	WORK SUPPORT			PRSNT	
	SELE-DIAG BESULTS		INITIAL DIAG	ОК	
			TRANSMIT DIAG	ок	
	DATA MONITOR		TCM	ок	
	DATA MONITOR (SPEC)	>	VDC/TCS/ABS	ок	
	BAIA MONITON (GI EO)		METER/M&A	ок	
	CAN DIAG SUPPORT MNTR		ICC	UNKWN	
			BCM/SEC	ок	
	ACTIVE TEST		IPDM E/R	ок	
			AWD/4WD/e4WD	UNKWN	
	Scroll Down		PRINT	Scroll Down	
	BACK LIGHT COPY		MODE BACK	LIGHT COPY	PKIA8343E

- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-118</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>118, "CHECK SHEET"</u>.

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-120</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

LAN-117

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

					CAN DIA	G SUPPOR	RT MNTR			
SELECT SYST	EM screen	Receive diagnosis		osis						
		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	—	_	UNKWN	_
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	—	UNKWN	-	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-131</u>, "Circuit Check Between TCM and <u>Data Link Connector"</u>.

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYS	TEM screen	Initial	Transmit			Hee	ceive diagno	OSIS			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNIWN	UNKWN	_	UNKWN		
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNK	—	
BCM	No indication	NG	UNKWN		-	UNKWN	-	_	-	UNKWN	
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	-	_	
IPDM E/R	No indication	—	UNKWN	UNION	_	_	UNKWN	_	-	_	



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Case 2

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-132, "Circuit Check Between Data</u> <u>A</u> <u>Link Connector and IPDM E/R"</u>.

					CAN DIA	G SUPPO	RT MNTR			
	EM screen	Initial	Tranamit			Rec	ceive diagn	osis		
SELECT CTCT	LW Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	UNKWN	
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNK	-
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	—	-	UNKWN
ABS	_	NG	UNKWN			—	_	UNKWN	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_



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Case 3

Check ECM circuit. Refer to LAN-133, "ECM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit			Red	ceive diagno	osis		
OLLEOT OTO	EW Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	_
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN
ABS	_	NG	UNKWN		UNKWN	_	-	UNKWN	-	_
IPDM E/R	No indication	-	UNKWN	UNIWN	_	—	UNKWN	_	_	_



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Case 4

Check TCM circuit. Refer to LAN-134, "TCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
SELECT SVS	TEM screen	Initial	Transmit	Transmit Receive diagnosis						
SELECT OF		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_



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Case 5

Check combination meter circuit. Refer to LAN-134, "Combination Meter Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
	STEM screen	Initial	Transmit	Receive diagnosis						
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	_	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	-	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	_



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Case 6

Check BCM circuit. Refer to LAN-135, "BCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
	STEM screen	Initial	Tranamit			Ree	ceive diagno	osis			
SELECT S	I OT EM SCIEEN	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	-	-	UNKWN	
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	—	UNKWN	-	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	-	_	



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Case 7

Check data link connector circuit. Refer to LAN-135, "Data Link Connector Circuit Check" .

			CAN DIAG SUPPORT MNTR							
	Miscreen	Initial	Tranomit			Red	ceive diagno	osis		
SELECT STOLE	VI SCIEEII	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	_
BCM N	lo indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	_	_
IPDM E/R	lo indication	—	UNKWN	UNKWN	_	_	UNKWN	_	_	-
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Case 8

Check steering angle sensor circuit. Refer to LAN-136, "Steering Angle Sensor Circuit Check" .

		CAN DIAG SUPPORT MNTR										
SELECT SY	STEM screen	Initial	Transmit	Receive diagnosis								
ULLUT UT	or Emission	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F		
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN		
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN		
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	—	UNKWN	-	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_		



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Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-136</u>, "ABS Actuator and Electric Unit (<u>Control Unit</u>) <u>Circuit Check</u>".

				CAN DIAG SUPPORT MNTR								
SELECT SY			Transmit	Receive diagnosis								
SELECT S		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F		
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	-	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN		
ABS	_	NA	UNKWN		UNK	_	-	UNKWN	-	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	-	_		



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Case 10

Check IPDM E/R circuit. Refer to LAN-137, "IPDM E/R Circuit Check" .

			CAN DIAG SUPPORT MNTR										
SELECT SYS	TEM screen	lantiti n l	Transmit	Receive diagnosis									
OLLEOT OTO	i Elin Scicicii	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F			
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN				
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	_			
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN			
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	-	_			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_			



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Case 11

Check CAN communication circuit. Refer to LAN-138, "CAN Communication Circuit Check" .

			CAN DIAG SUPPORT MNTR									
SELECT SY	STEM screen	Initial	Transmit - s diagnosis	Receive diagnosis								
02220101		diagnosis		ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F		
ENGINE	_	NG	UNKWN	_	UNKWN	UNWWN	UNKWN	_	UNKWN	UNKWN		
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	-	UNKWN	_		
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	-	_	UNKWN		
ABS	_	NA	UNKWN	UNKWN	UNKWN	_	—	UNKWN	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	_	_		

Case 12

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-138</u>, "IPDM E/R Ignition Relay <u>Circuit Check"</u>.

		CAN DIAG SUPPORT MNTR									
SELECT SYS	TEM screen	Initial	Transmit	Receive diagnosis							
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN	
ABS	-	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	_	-	
IPDM E/R	No indication	—	UNKWN	UNKWN	_	—	UNKWN	_	_	_	

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Case 13

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-138</u>, "IPDM E/R Ignition Relay <u>A</u> <u>Circuit Check</u>".

		CAN DIAG SUPPORT MNTR										
	EM screen	Initial	Transmit	Receive diagnosis								
SELECT STST	LIMBCICCI	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN		
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	_	UNKWN	-		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN		
ABS	-	NG	UNKWN		UNKWN	_	—	UNKWN	-	—		
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	-		

Circuit Check Between TCM and Data Link Connector 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)

OK or NG

- OK >> GO TO 3. NG >> Repair harnes
 - G >> Repair harness.



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: Continuity should exist.

: Continuity should exist.

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).
 - 12 (W) 2 (W) 11 (R) - 1 (R)

: Continuity should exist.

: Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B69.
- Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B69 terminals 51J (W), 52J (R).
 - 2 (W) 51J (W)
 - 1 (R) 52J (R)
- : Continuity should exist.

: Continuity should exist.

OK or NG

OK >> GO TO 5. NG >> Repair harness.



5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

- 51J (W) 6 (W) 52J (R) - 14 (R)
- : Continuity should exist.

: Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to <u>LAN-117, "Work Flow"</u>. NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-132

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- 2. Disconnect the negative battery terminal.
- Check following terminals and connectors for damage, bend and loose connection (control module side 3. and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R)

: Approx. 108 - 132Ω

OK or NG

- OK >> Replace ECM.
- NG >> Repair harness between ECM and A/T assembly.



TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

: **Approx. 54 - 66**Ω

6 (W) - 14 (R)

OK or NG

- OK >> Diagnose again. Refer to LAN-117, "Work Flow".
- >> Repair harness between data link connector and combi-NG nation meter.



Steering Angle Sensor Circuit Check

1. CHECK CONNECTOR

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- Turn ignition switch OFF. 1.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of steering angle sensor for damage, bend and loose connection (sensor 3. side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 3 (W) and 4 (R).

3 (W) - 4 (R)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace steering angle sensor.
- NG >> Repair harness between steering angle sensor and data link connector.



ABS Actuator and Electric Unit (Control Unit) Circuit Check **1. CHECK CONNECTOR**

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose 3. connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector. UK\$00219



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- A/T assembly
- Combination meter
- BCM
- Steering angle sensor
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Continuity should not exist.

OK or NG

OK	>> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

6 (W) - Ground 14 (R) - Ground : Continuity should not exist. : Continuity should not exist.

OK or NG

- OK >> Check ECM and IPDM E/R. Refer to <u>LAN-139</u>, "ECM/ <u>IPDM E/R INTERNAL CIRCUIT INSPECTION"</u>.
- NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to <u>PG-13</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON <u>AND/OR START</u>".

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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



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System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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COATA LINE


Work Flow

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1. When there are no indications of "AUTO DRIVE POS.", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM		
		ENGINE		
	CONSULT- II	A/T		
		ABS		
		AIR BAG		
	ENGINE	BCM		
	START (NISSAN BASED VHCL)	METER A/C AMP		
	START (RENAULT BASED VHCL)	merero vo min		
	SUB MODE			
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E	

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS
		WORK SUPPORT	DTC RESULTS TIME
		SELF-DIAG RESULTS	
		DATA MONITOR	
		DATA MONITOR (SPEC)	
		CAN DIAG SUPPORT MNTR	
		ACTIVE TEST	
			F.F.DATA
		Scroll Down	ERASE PRINT
		BACK LIGHT COPY	MODE BACK LIGHT COPY

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE		CAN DIAG SUF	PORT MNTR		
(Example)			ENGI	NE		1
	WORK SUPPORT			PR\$NT		
	SELF-DIAG RESULTS	IN	ITIAL DIAG	ок		I
		TF	RANSMIT DIAG	ОК		
	DATA MONITOR	тс	CM	ОК		I
	DATA MONITOB (SPEC)		DC/TCS/ABS	ок		I
	DAIA MONTON (GI EO)	M	ETER/M&A	ок		
	CAN DIAG SUPPORT MNTR	10	C	UNKWN		1
		BC	CM/SEC	ок		
	ACTIVE TEST	IP	DM E/R	ок		
		AV	ND/4WD/e4WD	UNKWN		I
-	Scroll Down		PRINT	Scroll Down		I
	BACK LIGHT COPY	M	ODE BACK	LIGHT COPY	PKI48343E	I

- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-146</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-146</u>, "CHECK SHEET".

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-148</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

					CAN DIA	G SUPPO	RT MNTR			
	EMiscreen	Initial	Tranamit			Red	ceive diagno	osis		
SELECT STOP	LIVI SCIEEN	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	—	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	_
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-161, "Circuit Check Between TCM</u> and <u>Driver Seat Control Unit"</u>.

					CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Tronomit			Red	ceive diagno	osis		
0222010101	Livi Sereen	diagnosis dia	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN		-	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_		UNKWN	UNKWN	_	-	_
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN
ABS	_	NG	UNKWN		UNKWN	_	_	UNKWN	-	_
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	_	_	_



Case 2

Check harness between driver seat control unit and data link connector. Refer to <u>LAN-162, "Circuit Check</u> <u>A</u><u>Between Driver Seat Control Unit and Data Link Connector"</u>.

		1								
					CAN DIA	G SUPPOI	RT MNTR			
	EM seroop	la Hall	Transmit			Red	ceive diagno	osis		
SELECT STOT	LIVISCIEET	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	-
AUTO DRIVE POS.	No invication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	-	-
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	_	_	_



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Case 3

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-163</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

					CAN DIA	G SUPPO	RT MNTR						
SELECT SYST	EM screen	Initial	Tropomit	Receive diagnosis									
022201 0101	LINISCIECH	Initial diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN				
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	-			
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_			
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN			
ABS	_	NG	UNKWN			_	-	UNKWN	-	_			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_			



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Case 4

Check ECM circuit. Refer to LAN-164, "ECM Circuit Check" .

					CAN DIA	G SUPPOI	RT MNTR			
SELECT SVST	EM scroon	Initial	Tropomit			Rec	ceive diagno	osis		
022201 0101	LIVI SCIECIT	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG		_	UNK	UNKWN		-	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	_
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
ABS	_	NG	UNKWN		UNKWN	_	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN		_	_	UNKWN	_	_	_



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Case 5

Check TCM circuit. Refer to LAN-164, "TCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tropomit			Red	ceive diagno	osis		
022201 0101	LINGUICUT	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	—	UNK	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	-	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_



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Case 6

Check driver seat control unit circuit. Refer to LAN-165, "Driver Seat Control Unit Circuit Check" .

					CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	FM screen	Initial	Tropomit			Red	ceive diagno	osis		
022201 0101	LINISCIECT	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	-	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_



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Case 7

Check combination meter circuit. Refer to LAN-165, "Combination Meter Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR						
SELECT SVST	EM screen	Initial	Tropomit	Receive diagnosis									
022201 0101	LIVI SCIECIT	Initial diagnosis c	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F			
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN			
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	_			
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNIWN	UNKWN	_	-	_			
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN			
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	-	-			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_			



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Case 8

Check BCM circuit. Refer to LAN-166, "BCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
SELECT SVST	EM screen	Initial	Tropomit			Red	ceive diagno	osis		
022201 0101	LIVI SCIECIT	Initial I diagnosis di	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	-	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN		_	-	-
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_



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Case 9

Check data link connector circuit. Refer to LAN-166, "Data Link Connector Circuit Check" .

			CAN DIAG SUPPORT MNTR								
SELECT SVST	EM screen	Initial	Transmit diagnosis	Receive diagnosis							
OLLEOF STOP	LIVISCIECI	diagnosis		ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	-	
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	-	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN	
ABS	-	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	-	-	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	



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Case 10

Check steering angle sensor circuit. Refer to LAN-167, "Steering Angle Sensor Circuit Check" .

					CAN DIA	G SUPPOI	RT MNTR				
SELECT SVST	EM screen	Initial	Transmit	Receive diagnosis							
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F	
ENGINE	—	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN	
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	



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Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-167</u>, "ABS Actuator and Electric Unit (<u>Control Unit</u>) <u>Circuit Check</u>".

			CAN DIAG SUPPORT MNTR									
SELECT SYST	EM screen	Initial diagnosis	Tropomit			Red	ceive diagno	osis				
022201 0101	LIVISCIEET		diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	-		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	-		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN		
ABS	_	V			UNKWN	_	-	UNKWN	-	-		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_		



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Case 12

Check IPDM E/R circuit. Refer to LAN-168, "IPDM E/R Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR					
SELECT SVST	EM screen	Initial	T		Receive diagnosis							
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F		
ENGINE	—	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN			
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	-		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	-		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN		
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	-	-		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	_		



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Case 13

Check CAN communication circuit. Refer to LAN-168, "CAN Communication Circuit Check" .

		CAN DIAG SUPPORT MNTR									
SELECT SVST	EM screen	Initial	Tropomit			Red	ceive diagno	osis			
022201 0101	LIVISCIECI	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/F	
ENGINE	_	NG		_	UNK	UNKWN	UNKWN	_	UNKWN	UNK	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN	
ABS	_	V	UNKWN		UNKWN	_	_	UNKWN	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	

Case 14

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-169</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

			CAN DIAG SUPPORT MNTR									
SELECT SYST	EM screen	Initial	Transmit diagnosis		Receive diagnosis							
022201 0101	EW Screen	diagnosis		ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNK	UNKWN	UNKWN	_	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	_	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	-		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN		
ABS	-	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	-	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	-		

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Case 15

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-169, "IPDM E/R Ignition Relay А Circuit Check" .

		CAN DIAG SUPPORT MNTR								
	EM screen	Initial	Tropomit			Rec	ceive diagno	osis		
022201 0101		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN
A/T	_	NG	UNKWN		_	UNKWN	_	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	—	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
ABS	_	NG	UNKWN		UNKWN	_	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_

Circuit Check Between TCM and Driver Seat Control Unit **1. CHECK CONNECTOR**

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- Check continuity between A/T assembly harness connector F9 2. terminals 3 (W), 8 (R) and harness connector F33 terminals 12
 - (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)

- : Continuity should exist.
 - : Continuity should exist.



- OK >> GO TO 3. NG
 - >> Repair harness.



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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).
 - 12 (W) 2 (W) 11 (R) - 1 (R)

: Continuity should exist.

: Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37.
- Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B37 terminals 15 (W), 14 (R).
 - 2 (W) 15 (W)
- : Continuity should exist.
- 1 (R) 14 (R)
- : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-145, "Work Flow".

NG >> Repair harness.



Circuit Check Between Driver Seat Control Unit and Data Link Connector UKS0021G 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37 and harness connector B69.
- Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).
 - 15 (W) 51J (W) 14 (R) - 52J (R)

: Continuity should exist. : Continuity should exist.

OK or NG

OK	>> GO TO 3.
NG	>> Repair harness.



: Continuity should exist.

: Continuity should exist.

OK or NG O CONNECTOR SMJ OK >> Connect all the connectors and diagnose again. Refer to 51J, 52J LAN-145, "Work Flow" . Ω NG >> Repair harness. Circuit Check Between Data Link Connector and IPDM E/R **1. CHECK CONNECTOR** Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side). Harness connector M31 Harness connector E152 OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect harness connector M31. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G BAT (R). Data link connector 6 (W) - 31G (W) : Continuity should exist. 14 14 (R) - 42G (R) : Continuity should exist. 6 6, 14 SMJ OK or NG OK >> GO TO 3. Ω NG >> Repair harness. 3. CHECK HARNESS FOR OPEN CIRCUIT Disconnect IPDM E/R connector. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 termi-

nals 39 (W), 40 (R).

3. CHECK HARNESS FOR OPEN CIRCUIT

51J (W) - 6 (W)

52J (R) - 14 (R)

1.

2.

3.

1. 2.

1.

2.

(W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

: Continuity should exist.

: Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-145, "Work Flow" .

NG >> Repair harness.

CONNECTOR SMJ 31G, 42G

Revision: April 2004

PKIA8140E

IPDM E/R connector

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39, 40



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SMJ harness connector



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ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R)

: Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM and A/T assembly.



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TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Driver Seat Control Unit Circuit Check	UKS001ER
1. CHECK CONNECTOR	
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose con harness side). Driver seat control unit connector Harness connector P1 Harness connector B37 OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	nection (control unit side and
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect driver seat control unit connector. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R). 	
3 (W) - 19 (R) : Approx. 54 - 66Ω	لر KIS. ver seat control unit connector
OK or NG OK >> Replace driver seat control unit. NG >> Repair harness between driver seat control unit and harness connector B69.	
Combination Meter Circuit Check 1. CHECK CONNECTOR	UKS0021K
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage, bend and and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector 	loose connection (meter side
2. CHECK HARNESS FOR OPEN CIRCUIT	
1 Disconnect combination meter connector	
 Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R). 	

11 (W) - 12 (R)

: **Approx. 54 - 66**Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



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BCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-25, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Diagnose again. Refer to LAN-145, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.



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Steering Angle Sensor Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 3. Check terminals and connector of steering angle sensor for damage, bend and loose connection (sensor side and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect steering angle sensor connector. 2. Check resistance between steering angle sensor harness connector M47 terminals 3 (W) and 4 (R). 3 (W) - 4 (R) : Approx. 54 - 66 Ω Steering angle sensor connector OK or NG

- OK >> Replace steering angle sensor.
- NG >> Repair harness between steering angle sensor and data link connector.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

- Turn ignition switch OFF. 1.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect ABS actuator and electric unit (control unit) connector. 1.
- Check resistance between ABS actuator and electric unit (con-2. trol unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace ABS actuator and electric unit (control unit).
- NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



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IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 108 - 132Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- BCM
- Steering angle sensor
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

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Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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Schematic



UKS001F3

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LAN-CAN-18

= : DATA LINE



Work Flow

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1. When there are no indications of "AUTO DRIVE POS.", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	ВСМ	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	DKIA2003E

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example	SELECT DIAG MODE	SELF-DIAG RESULTS	
(WORK SUPPORT	DTC RESULTS TIME	
	SELF-DIAG RESULTS		
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		F.F.DATA	
	Scroll Down	ERASE PRINT	
	BACK LIGHT COPY	MODE BACK LIGHT COPY	

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE		CAN DIAG SUPPORT MNTR	
(Example)			ENGINE	
	WORK SUPPORT		PRSNT	
	SELE-DIAG BESULTS		INITIAL DIAG OK	
			TRANSMIT DIAG OK	
	DATA MONITOR		тсм ок	
	DATA MONITOR (SPEC)	>	VDC/TCS/ABS OK	
	BAIA MONTON (GI EO)		METER/M&A OK	
	CAN DIAG SUPPORT MNTR		ICC UNKWN	
			BCM/SEC OK	
	ACTIVE TEST		IPDM E/R OK	
			AWD/4WD/e4WD UNKWN	
	Scroll Down		PRINT Scroll Down	
	BACK LIGHT COPY		MODE BACK LIGHT COPY	PKIA8343E

- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-177, "CHECK SHEET"</u>.
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>177, "CHECK SHEET"</u>.

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. Check CAN communication line of the navigation system. Refer to <u>AV-149</u>, "CAN Communication Line <u>Check"</u>.
- 7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to <u>LAN-177</u>, <u>"CHECK SHEET"</u>.

LAN-175

 Mark the "NG" or "UNKWN" item of the check sheet table with "v" from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to <u>LAN-177, "CHECK SHEET"</u>.
 NOTE:

If "NG" is displayed on "CAN COMM" as "CAN DIAG SUPPORT MONITOR" for the diagnosed control unit, replace the control unit. Refer to <u>AV-149</u>, "CAN Communication Line Check".

9. According to the check sheet results (example), start inspection. Refer to <u>LAN-179</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" for the diagnosed control unit, replace the control unit.

				CA	N DIAG SU	PPORT MN	NTR					
SELECT SYSTEM screer	Initial	Transmit		Receive diagnosis								
	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R		
Check sheet table SELECT SYSTEM screen Initial diagnosis ENGINE A/T A/T NG AUTO DRIVE POS. No indication Display control unit CAN COM' BCM No indication ABS			_	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN		
т –	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	UNKWN	-		
JTO DRIVE POS. No indicat	on NG	UNKWN		UNKWN	UNKWN	UNKWN	_	-	_	_		
splay control unit –	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7		
CM No indicat	on NG	UNKWN	UNKWN	_	UNKWN	—	-	_	_	UNKWN		
BS –	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	-	—			
DM E/R No indicat	on —	UNKWN	UNKWN	—	—	UNKWN	—	_	—	-		
ympionis .	SE	Attach copy LECT SYS	of TEM		, SE	Attach copy LECT SYS	of TEM					
		CAN	A disj DIAG SUPF	Attach copy play contro PORT MON	r of I unit NITOR chec	k sheet						

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Attach copy of Attach copy of Attach copy of AUTO DRIVE POS. ENGINE A/T SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS Attach copy of Attach copy of Attach copy of BCM ABS IPDM E/R SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS Attach copy of Attach copy of Attach copy of ENGINE AUTO DRIVE POS. A/T CAN DIAG SUPPORT CAN DIAG SUPPORT CAN DIAG SUPPORT MNTR MNTR MNTR Attach copy of Attach copy of Attach copy of BCM ABS IPDM E/R CAN DIAG SUPPORT CAN DIAG SUPPORT CAN DIAG SUPPORT MNTR MNTR MNTR PKIA9139E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-194, "Circuit Check Between TCM</u> and <u>Driver Seat Control Unit"</u>.

		CAN DIAG SUPPORT MNTR											
SELECT SYSTEM screen		Initial	Transmit diagnosis	Receive diagnosis									
		diagnosis		ECM	тсм	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN		UNKWN	_	-		UNKWN		
A/T	_	NG	UNKWN	UNKWN	_		_	_	_		_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNK	UNKWN	UNKWN	_	_	_	_		
Display control unit	_	CAN COMM	CAN CIRC 1	CAN IRC 3	-	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	_	UNKWN		
ABS	_	NG	UNKWN	UNKWN	UNK	-	_	UNKWN	-	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_		



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Case 2

Check harness between driver seat control unit and data link connector. Refer to <u>LAN-195</u>, "Circuit Check <u>Between Driver Seat Control Unit and Data Link Connector</u>".

		CAN DIAG SUPPORT MNTR											
SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	тсм	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-		UNK		
A/T	_	NG	UNKWN	UNKWN	_		—	_	_	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	_	_		
Display control unit	_	CAN COMM	CAN CIRC 1	CAN IRC 3	_	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7		
всм	No indication	NG	UNKWN		_	UNKWN	—	_	-	_	UNKWN		
ABS	_	NG	UNKWN		UNK	-	—	UNKWN	-	_	_		
IPDM E/R	No indication	_	UNKWN		_	-	UNKWN	_	-	_	_		


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Case 3

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-196, "Circuit Check Between Data</u> <u>A</u> <u>Link Connector and IPDM E/R"</u>.

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Tronomit				Receive of	liagnosis			
	EWBORCON	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_		UNK
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	_	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	-	CAN CRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	_	
ABS	-	NG	UNKWN		UNK	_	_	UNKWN	-	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_



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Check ECM circuit. Refer to LAN-197, "ECM Circuit Check" .

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Tranamit				Receive of	diagnosis			
		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_		UNK		—	-		UNKWN
A/T	_	NG	UNKWN		_	UNKWN	—	_	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_	_	
Display control unit	_	CAN COMM	CAN CIRC 1	CAN IRC 3	—	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	—	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	—	_	_	UNKWN
ABS	_	NG	UNKWN		UNKWN	-	—	UNKWN	_	_	-
IPDM E/R	No indication	—	UNKWN		_	—	UNKWN	_	_	—	-
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Case 5

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Check TCM circuit. Refer to LAN-197, "TCM Circuit Check" .

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Tranamit				Receive of	diagnosis			
	EWSSICCH	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN
A/T	_	NG	UNKWN		_		_	_	-	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNK	UNKWN	UNKWN	_	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	-	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	_	UNKWN	-	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	-	_	-



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Check driver seat control unit circuit. Refer to LAN-198, "Driver Seat Control Unit Circuit Check" .

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Transmit			_	Receive of	diagnosis	_		_
		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	—	_	-	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	_	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	—	UNKWN	_		-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	—	-	_	-
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Case 7

Check combination meter circuit. Refer to LAN-198, "Combination Meter Circuit Check" .

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Tranamit				Receive of	liagnosis			
	LWSGROUN	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_		_	_	-	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNK	UNKWN	_	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN ORC 5	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	_	-	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	_	UNKWN	-	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_



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Check display control unit circuit. Refer to LAN-199, "Display Control Unit Circuit Check" .

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Tranamit				Receive of	diagnosis			
	LWSCICCI	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	—	_	-	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	-	_
Display control unit	_	CAN COMM	CANORC 1	CAN ORC 3	_	CAN CRC 5	CAN RC 2	_	CAN ORC 4	_	CANORC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-	_	-	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	—	-	_	-
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Check BCM circuit. Refer to LAN-199, "BCM Circuit Check" .

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Tranamit				Receive of	diagnosis			
	EWBORCON	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	-	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CANORC 2	_	CAN CIRC 4	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	_	UNKWN
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-	_
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	-	_	_



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Check data link connector circuit. Refer to LAN-200, "Data Link Connector Circuit Check" .

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Transmit				Receive of	diagnosis			
	EWBORCON	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	—	_	-	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	_	-	—
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	-	_	—
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Case 11

Check steering angle sensor circuit. Refer to LAN-200, "Steering Angle Sensor Circuit Check" .

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Tranamit				Receive o	liagnosis			
		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	—	—	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_		-	—	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	-



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Check front air control circuit. Refer to LAN-201, "Front Air Control Circuit Check" .

					CA	N DIAG SU	PPORT MN	ITR			
	EM scroon	Initial	Troponit				Receive of	diagnosis			
	EWBORCON	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	—	—	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	_	CAN ORC 4	_	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	—	_		UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	_	UNKWN	_		_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	—	-	_	-
							<u> </u>				
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Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-201, "ABS Actuator and Electric Unit</u> <u>(Control Unit) Circuit Check"</u>.

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Tranamit				Receive of	liagnosis			
	EWBORCCH	diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	—	_	UNKWN
ABS	-	N	UNKWN	UNKWN	UNKWN	-	_	UNKWN	-	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_



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Check IPDM E/R circuit. Refer to LAN-202, "IPDM E/R Circuit Check" .

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Transmit			_	Receive of	diagnosis			
		diagnosis	diagnosis	ECM	ТСМ	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	—	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	—	—	_	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	-	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	_	CAN ORC 7
всм	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	—	_	_	UNIOWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	—	-	_	-
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Case 15

Check CAN communication circuit. Refer to LAN-202, "CAN Communication Circuit Check" .

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Tranamit				Receive of	liagnosis			
	LWSGROOM	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNK	UNK	UNKWN	_	-	UNKWN	UNKWN
A/T	_	NG	UNKWN		_	UNK	_	_	_		_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_	_
Display control unit	_	CAN COMM	CAN ORC 1	CAN CRC 3	_	CAN ORC 5	CANORC 2	_	CAN ORC 4	_	CANORC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	-	UNKWN
ABS	_	NZ			UNKWN	-	_	UNKWN	-	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_

Case 16

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-203</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis							
	LWSGROOM	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNK	UNKWN	UNKWN	_	-	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	-	_	-	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	-	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	-	_	-

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Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-203</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

					CA	N DIAG SU	PPORT MN	ITR			
SELECT SYST	EM screen	Initial	Transmit				Receive c	liagnosis			
	EW Sercen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		_	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_		_	_	_	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_	—	—
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2		CAN CIRC 4	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	-	_	_	_	UNKWN
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-		_	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	_	—	-
· · ·			· · · · · · · · · · · · · · · · · · ·				· · ·				

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK or NG

OK

NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12
 - (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)

>> GO TO 3.

>> Repair harness.

: Continuity should exist. : Continuity should exist.





LAN-195

OK >> GO TO 3. NG >> Repair harness.

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LAN-175, "Work Flow" .

3. CHECK HARNESS FOR OPEN CIRCUIT

Check	continuity	between	harness	connector	M40	terminals	51J
(W), 52	J (R) and (data link c	onnector	M22 termin	als 6	(W), 14 (R).

- 51J (W) 6 (W)
- 52J (R) 14 (R)

: Continuity should exist. : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-175, "Work Flow" .
- NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side).
- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

3. CHECK HARNESS FOR OPEN CIRCUIT

Disconnect IPDM E/R connector.

- Disconnect harness connector M31. 1.
- Check continuity between data link connector M22 terminals 6 2. (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).
 - 6 (W) 31G (W) 14 (R) - 42G (R)
- : Continuity should exist.
- : Continuity should exist.

: Continuity should exist.

: Continuity should exist.

OK or NG

1

2.

OK or NG

OK

NG

OK >> GO TO 3. NG >> Repair harness.

nals 39 (W), 40 (R).

31G (W) - 39 (W)

42G (R) - 40 (R)

>> Repair harness.







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ECM Circuit Check 1. CHECK CONNECTOR	UK\$0023K
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection and harness side). ECM connector Harness connector E19 Harness connector F33 <u>OK or NG</u> OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT 	n (control module side
 Disconnect ECM connector. Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R). 	
94 (W) - 86 (R): Approx. 108 - 132 Ω OK or NGOK>> Replace ECM.OK>> Repair harness between ECM and A/T assembly.86	1 connector 94 94 PKW0846E
TCM Circuit Check 1. CHECK CONNECTOR	PKIA0816E UKS0023L
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of A/T assembly for damage, bend and loose connected and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	ection (control module
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect A/T assembly connector. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R). 3 (W) - 8 (R) Approx. 54 - 66Ω OK or NG OK >> Replace A/T assembly. NG >> Repair harness between A/T assembly and harness 	mbly connector

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Driver Seat Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side).
- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace driver seat control unit.
- NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



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1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 3. Check terminals and connector of display control unit for damage, bend and loose connection (control unit side and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect display control unit connector. 1. 2. Check resistance between display control unit harness connector M95 terminals 25 (W) and 26 (R). BAT HS 25 (W) - 26 (R) : Approx. 54 - 66 Ω Display control unit connector

OK or NG

OK >> Replace display control unit.

Display Control Unit Circuit Check

NG >> Repair harness between display control unit and data link connector.



BCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

LAN-199

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-25, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: **Approx. 54 - 66**Ω

OK or NG

- OK >> Diagnose again. Refer to <u>LAN-175, "Work Flow"</u>.
- NG >> Repair harness between data link connector and combination meter.



Steering Angle Sensor Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of steering angle sensor for damage, bend and loose connection (sensor side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 3 (W) and 4 (R).

3 (W) - 4 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace steering angle sensor.
- NG >> Repair harness between steering angle sensor and data link connector.



Revision: April 2004

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LAN-201

Front Air Control Circuit Check 1. CHECK CONNECTOR

Turn ignition switch OFF. 1.

Revision: April 2004

- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of front air control for damage, bend and loose connection (unit side and harness side)



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IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 108 - 132Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Steering angle sensor
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

- OK >> GO TO 2.
- NG >> Repair or replace as necessary.

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Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



LAN-204

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PFP:23710

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UKS001FO

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DATA LINE



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BKWA0143E





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Work Flow

1. When there are no indications of "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM		
		ENGINE		
	CONSULT- II	A/T		
		ABS		
		AIR BAG		
	ENGINE	всм		
	START (NISSAN BASED VHCL)	METER A/C AMP		
	START (RENAULT BASED VHCL)			
	SUB MODE			
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E	

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	[SELF-DIA	AG RESUL	TS	
(I)	WORK SUPPORT		DTC RESU	JLTS	TIME	
	SELF-DIAG RESULTS		CAN COMM		0	
	DATA MONITOR					
	DATA MONITOR (SPEC)					
	CAN DIAG SUPPORT MNTR					
	ACTIVE TEST					
				F	.F.DATA	
	Scroll Down		ERASE	PR	INT	
	BACK LIGHT COPY		MODE BACK	< LIGHT	COPY	DKIA9260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

	ORT MNTR	CAN DIAG SUP		SELECT DIAG MODE	(Example)
	<u> </u>	ENGI			(Example)
	PRSNT			WORK SUPPORT	
	ок	TIAL DIAG		SELF-DIAG RESULTS	
	ок	ANSMIT DIAG			
	ОК	м			
	ок	C/TCS/ABS		DATA MONITOR (SPEC)	
	OK	TER/M&A			
	UNKWN		, F	CAN DIAG SUPPORT MNTR	
	OK			ACTIVE TEST	
				LJ	
	Scroll				
	Down	PRINT		Scroll Down	
DIVIA 00 40 F	GHT COPY	DDE BACK		BACK LIGHT COPY	
PKIA8343E					

- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-210</u>, "CHECK <u>SHEET</u>".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>210, "CHECK SHEET"</u>.

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-212</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

LAN-209

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

			CAN DIAG SUPPORT MNTR									
SELECT SYST	EM screen	Initial	Transmit			Red	ceive diagn	osis				
	LWBORCON	diagnosis	gnosis diagnosis ECM TCM METER/ M&A BCM/SEC AWD/4WD VE /e4WD									
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	_		
ABS	_	NG	UNKWN	UNKWN	_	-	-	_	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	-	_		

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

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PKIA9382E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-223</u>, "Circuit Check Between TCM and <u>Data Link Connector"</u>.

					CAN DIA	G SUPPO	RT MNTR				
	EM screen	Initial	Receive diagnosis								
OLLEON ON OT	LIN SCIECU	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		_	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNWWN	-	UNKWN	_	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	_	_	-	_	_	_	
IPDM E/R	No indication	-	UNKWN		_	_	UNKWN	_	_	_	



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Case 2

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-224, "Circuit Check Between Data</u> <u>A</u> <u>Link Connector and IPDM E/R"</u>.

	EM screen	Initial	Transmit			Red	ceive diagn	osis		
SELECT STOT		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNK	—	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_		_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	_	-	_	UNKWN	_
ABS	_	NG	UNKWN		_	-	-	-	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	_	_



M

Check ECM circuit. Refer to LAN-225, "ECM Circuit Check" .

SELECT SYSTEM screen											
		Initial diagnosis	Transmit diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	osis AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNK	_	UNKWN	UNKWN	UNKWN	UNK	_	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	_	_	_	_	_	_	
IPDM E/R	No indication	-	UNKWN		_	_	UNKWN	_	_	_	



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Case 4

Check TCM circuit. Refer to LAN-226, "TCM Circuit Check" .

		CAN DIAG SUPPORT MNTR									
SELECT SYSTEM screen		Initial diagnosis	Tranamit	Receive diagnosis							
			diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN	
A/T	_	NG	UNKWN		—	UNKWN	-		_	_	
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	_	_	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	-	
ABS	_	NG	UNKWN	UNKWN	-	—	-	-	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	_	_	



M

Check combination meter circuit. Refer to LAN-226, "Combination Meter Circuit Check" .

	CAN DIAG SUPPORT MNTR										
SELECT SYSTEM screen		Initial diagnosis	Transmit	Receive diagnosis							
			diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	-	
BCM	No indication	NG	UNKWN	UNKWN	_	UNK	-	_	_	UNKWN	
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	-	—	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	_	_	-	_	_	-	
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	UNKWN	—	_	-	


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Case 6

Check BCM circuit. Refer to LAN-227, "BCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
	EM screen	Initial	Tranamit	Receive diagnosis							
OLLEOT OTOT	LW SCIECH	diagnosis	diagnosis	ECM	⊤см	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	_	—	-	-	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKAN	_	_	_	



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Case 7

Check data link connector circuit. Refer to LAN-227, "Data Link Connector Circuit Check" .

					CAN DIA	G SUPPO				
SELECT SYST	EM screen	Initial	Transmit							
		diagnosis	diagnosis	ECM	ТСМ	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	/ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	-	-
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	—	—	-	-	-	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	-	_



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Case 8

Check transfer control unit circuit. Refer to LAN-228, "Transfer Control Unit Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis								
	LIN SCIECU	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNK	_	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_		_	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN		
ALL MODE AWD/4WD	_	NG			UNKWN	_	-	-		_		
ABS	_	NG	UNKWN	UNKWN	_	—	-	_	-	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_		



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Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-228</u>, "ABS Actuator and Electric Unit (<u>Control Unit</u>) <u>Circuit Check</u>".

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis							
		diagnosis	diagnosis	ECM	⊤СМ	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F	
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	_	-	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_		-	
ABS	_	N			-	_	-	-	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	



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Case 10

Check IPDM E/R circuit. Refer to LAN-229, "IPDM E/R Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
	EM screen	Initial	Tranamit	Receive diagnosis							
OLLEON ON OT	LW Screen	diagnosis	diagnosis	ECM	⊤см	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	—	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	-	—	-	—	_	-	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	



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Case 11

Check CAN communication circuit. Refer to LAN-230, "CAN Communication Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
	EM screen	Initial	Tranamit	Receive diagnosis							
	LW SCIECH	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	-	UNKWN	
A/T	_	NG	UNKWN		_	UNWWN	_	UNKWN	_	_	
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	_	_	UNKWN	
ALL MODE AWD/4WD	_	NG			UNKWN	—	-	_		_	
ABS	_	N	UNKWN	UNIOWN	_	_	-	_	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	

Case 12

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to LAN-230, "IPDM E/R Ignition Relay Circuit Check".

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit			Ree	ceive diagn	osis		
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	_	UNK	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	-	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	_	—	-	_	_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	—	-	_

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Case 13

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-230</u>, "IPDM E/R Ignition Relay <u>A</u> <u>Circuit Check</u>".

					CAN DIA	G SUPPO	RT MNTR			
	EM scroon	Initial	Tranamit			Re	ceive diagn	osis		
	LINISCIECT	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN		_	UNKWN	_	UNKIVN	_	-
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	_
ABS	_	NG	UNKWN		-	_	-	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_

Circuit Check Between TCM and Data Link Connector 1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)

OK or NG

- OK >> GO TO 3. NG >> Repair harnes
 - G >> Repair harness.



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: Continuity should exist.

: Continuity should exist.

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).
 - 12 (W) 2 (W) 11 (R) - 1 (R)

: Continuity should exist.

: Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B69.
- Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B69 terminals 51J (W), 52J (R).
 - 2 (W) 51J (W)
 - 1 (R) 52J (R)
- : Continuity should exist.

: Continuity should exist.

OK or NG

OK >> GO TO 5. NG >> Repair harness.

harness.



5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

- 51J (W) 6 (W) 52J (R) - 14 (R)
- : Continuity should exist.

: Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to <u>LAN-209, "Work Flow"</u>. NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-224



- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R)

: Approx. 108 - 132Ω

OK or NG

- OK >> Replace ECM.
- NG >> Repair harness between ECM and A/T assembly.



TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R)

: **Approx. 54 - 66**Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.



2. CHECK HARNESS FOR OPEN CIRCUIT А 1. Disconnect combination meter connector. 2. Check resistance between combination meter harness connec-В tor M24 terminals 11 (W) and 12 (R). BAT 11 (W) - 12 (R) : Approx. 54 - 66Ω Combination meter connector OK or NG OK >> Replace combination meter. NG >> Repair harness between combination meter and data link connector. D Ω PKIA6837E Ε **BCM Circuit Check** UKS001FX 1. CHECK CONNECTOR F 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. Check terminals and connector of BCM for damage, bend and loose connection (control module side and 3. harness side). OK or NG OK >> GO TO 2. Н NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect BCM connector. 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R). BCM connector BAT 39 (W) - 40 (R) : Approx. 54 - 66 Ω OK or NG LAN OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" . NG >> Repair harness between BCM and data link connector. Ω SKIA6869E Μ **Data Link Connector Circuit Check** UKS001FY

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

OK or NG

OK

- >> Diagnose again. Refer to LAN-209, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.

: **Approx. 54 - 66**Ω



Transfer Control Unit Circuit Check

1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of transfer control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect transfer control unit connector.
- 2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace transfer control unit.
- NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- A/T assembly
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Continuity should not exist.

OK or NG

OK	>> GO TO 3.
-	

NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

6 (W) - Ground 14 (R) - Ground : Continuity should not exist. : Continuity should not exist.

OK or NG

- OK >> Check ECM and IPDM E/R. Refer to <u>LAN-231, "ECM/</u> <u>IPDM E/R INTERNAL CIRCUIT INSPECTION"</u>.
- NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to <u>PG-13</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON <u>AND/OR START</u>".

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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



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System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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Schematic





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Work Flow

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1. When there are no indications of "AUTO DRIVE POS.", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM		
		ENGINE		
	CONSULT- II	A/T		
		ABS		
		AIR BAG		
	ENGINE	всм		
	START (NISSAN BASED VHCL)	METER A/C AMP		
	START (RENAULT BASED VHCL)			
	SUB MODE			
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E	

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS	
	WORK SUPPORT	DTC RESULTS TIME	
	SELF-DIAG RESULTS		
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		F.F.DATA	
	Scroll Down	ERASE PRINT	
	BACK LIGHT COPY	MODE BACK LIGHT COPY PKIA8260E	

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	CAN DIAG SUPPORT MNTF	<u> </u>
()		ENGINE	
		PRSNT	
	SELF-DIAG RESULTS	INITIAL DIAG OK	
	DATA MONITOB	TRANSMIT DIAG OK	
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
		BCM/SEC OK	
	ACTIVE TEST	IPDM E/R OK	
		AWD/4WD/e4WD UNKWN	
	Scroll Down	PRINT Scr Do	oli wn
	BACK LIGHT COPY	MODE BACK LIGHT CO	

- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-238</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>238, "CHECK SHEET"</u>.

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-240</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

					CAN DIA	G SUPPOI	RT MNTR			
	EM screen	Initial	Tronomit			Red	ceive diagn	osis		
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	-	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	_	_	_	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-253</u>, "Circuit Check Between TCM and Driver Seat Control Unit".

					CAN DIA	G SUPPOI	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis							
	LWBORCH	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNK	UNKWN	UNKAN	_	UNK	
A/T	_	NG	UNKWN	UNKWN	_	UNK	—	UNKAVN	_	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNK	UNKWN	UNKWN	_	—	_	
ВСМ	No indication	NG	UNKWN	UNK	_	UNKWN	-	_	_	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKIVN	UNK	_	-	-	UNKWN	-	
ABS	_	NG	UNKWN		_	—	_	_	_	_	
IPDM E/R	No indication	_	UNKWN	UNKIVN	_	_	UNKWN	_	_	_	

////// : Malfunctioning part ABS actuator and electric unit (control unit) Data link Front air connector control CAN H ______ CAN I -----Driver seat Transfer Combination ECM тсм BCM IPDM E/R control unit meter control unit PKIA9521E

Case 2

А Check harness between driver seat control unit and data link connector. Refer to LAN-254, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

					CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	EM screen	Initial	Tranemit	Receive diagnosis								
	LWBORCON	diagnosis	diagnosis	ECM	⊤СМ	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN		UNK	—	UNK		
A/T	_	NG	UNKWN	UNKWN	_	UNK	_		_	-		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_		
BCM	No indication	NG	UNKWN	UNK	_	UNKWN	-	_	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNK	UNK	_	-	-	UNKWN	_		
ABS	_	NG	UNKWN		_	—	-	_	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_		



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Case 3

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-255</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

					CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis								
	LWBORCCH	diagnosis dia NG UN	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	_	UNK		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNK	_	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	_	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN		_	-	-	UNKWN	_		
ABS	_	NG	UNKWN		_	—	-	_	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_		

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Case 4

Check ECM circuit. Refer to LAN-256, "ECM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tranemit			Re	ceive diagn	osis		
		diagnosis diag NG UN	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN		UNKWN		UNKWN	UNK	_	UNK
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	—	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_
BCM	No indication	NG	UNKWN	UNK	_	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKIVN	UNKWN	_	-	-	UNKWN	_
ABS	_	NG	UNKWN		_	_	-	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKIVN	_	_	UNKWN	_	_	_



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Case 5

Check TCM circuit. Refer to LAN-256, "TCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis							
011101 0101		diagnosis diagnosis	ECM	⊤СМ	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNK	-	UNKWN	_	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNK	UNKWN	UNKWN	-	-	-	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNK	_	-	-	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	_	-	-	-	_	_	
IPDM E/R	No indication	—	UNKWN	UNKWN	—	_	UNKWN	_	_	_	



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Case 6

Check driver seat control unit circuit. Refer to LAN-257, "Driver Seat Control Unit Circuit Check" .

					CAN DIA	G SUPPOI	RT MNTR					
SELECT SYST	EM screen	Initial	Tranemit	Receive diagnosis								
		diagnosis	diagnosis	ECM	⊤СМ	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN		
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	UNKWN	—	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	-		
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	_	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	_	_	UNKWN	-		
ABS	_	NG	UNKWN	UNKWN	-	—	_	_	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	—	UNKWN	-	_	-		



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Case 7

Check combination meter circuit. Refer to LAN-257, "Combination Meter Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	EM screen	Initial	Tranomit	Receive diagnosis								
	LIN BOICEIN	Initial Industrie diagnosis diagnosis NG UNKWN	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN		
A/T	—	NG	UNKWN	UNKWN	_		-	UNKWN	_	—		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_		
ВСМ	No indication	NG	UNKWN	UNKWN	—		-	_	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	-	UNKWN	-		
ABS	-	NG	UNKWN	UNKWN	_	—	-	_	_	_		
IPDM E/R	No indication	—	UNKWN	UNKWN	_	_	UNKWN	_	_	_		



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Case 8

Check BCM circuit. Refer to LAN-258, "BCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis								
	EW Soreen	diagnosis diagno NG UNK	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_		
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	-		
ABS	_	NG	UNKWN	UNKWN	_	—	-	_	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_		



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Case 9

Check data link connector circuit. Refer to LAN-258, "Data Link Connector Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	EM screen	Initial	Tranemit	Receive diagnosis								
		Initial Transmit diagnosis diagnosis NG UNKWN	ECM	⊤СМ	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN		
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	-	UNKWN	_	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	_	_		
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	_	UNKWN	_		
ABS	_	NG	UNKWN	UNKWN	_	_	-	_	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_		



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Case 10

Check transfer control unit circuit. Refer to LAN-259, "Transfer Control Unit Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Tranemit	Receive diagnosis							
	LIN Soreen	diagnosis	diagnosis	ECM	ТСМ	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F	
ENGINE	-	NG	UNKWN		UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN	
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	—	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN		_	-	-		_	
ABS	_	NG	UNKWN	UNKWN	—	—	-	—	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	



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Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-259</u>, "ABS Actuator and Electric Unit (<u>Control Unit</u>) <u>Circuit Check</u>".

		CAN DIAG SUPPORT MNTR									
SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	UNKWN	_	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	_	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-		_	
ABS	_	NZ	UNKWN		_	_	-	_	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	



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Case 12

Check IPDM E/R circuit. Refer to LAN-260, "IPDM E/R Circuit Check" .

	CAN DIAG SUPPORT MNTR										
SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/P	
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN	
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	_	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	_	_	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	_	-	-	-	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	I	_	_	



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Case 13

Check CAN communication circuit. Refer to LAN-260, "CAN Communication Circuit Check" .

	CAN DIAG SUPPORT MNTR											
SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNK	_	UNKWN	UNKWN	UNIWN	UNK	—	UNK		
A/T	—	NG	UNKWN	UNKWN	_		_		—	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNK	UNKIVN		_	_	-	UNKWN	_		
ABS	_	N			_	—	_	-	_	_		
IPDM E/R	No indication	—	UNKWN	UNKWN	_	_	UNKWN	_	_	_		

Case 14

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-261</u>, "IPDM E/R Ignition Relay <u>Circuit Check"</u>.

		CAN DIAG SUPPORT MNTR										
SELECT SYSTEM screen		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	тсм	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN		UNK	UNKWN	UNKWN	UNKWN	_	UNKWN		
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	-	UNKWN	—	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	—	_		
ВСМ	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	_	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNK	_	-	_	UNK	_		
ABS	_	NG	UNKWN	UNKWN	_	—	-	_	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_		
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Case 15

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-261, "IPDM E/R Ignition Relay</u> <u>A</u> <u>Circuit Check"</u>.

					CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tranomit			Re	ceive diagn	osis		
SELECT STOT	LINISCIECT	diagnosis	diagnosis	ECM	⊤СМ	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_		-	UNKWN	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	—	_	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	—	-	-	UNKWN	-
ABS	_	NG	UNKWN		_	_	-	_	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	_	_

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12
 - (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)
- OK or NG
- OK >> GO TO 3. NG >> Repair harness
 - >> Repair harness.
- : Continuity should exist.
- : Continuity should exist.



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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).
 - 12 (W) 2 (W) 11 (R) - 1 (R)

: Continuity should exist.

: Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37.
- Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B37 terminals 15 (W), 14 (R).
 - 2 (W) 15 (W)
- : Continuity should exist.
- 1 (R) 14 (R)
- : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-237, "Work Flow".

NG >> Repair harness.



Circuit Check Between Driver Seat Control Unit and Data Link Connector UKSOUTGE 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37 and harness connector B69.
- Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).
 - 15 (W) 51J (W) 14 (R) - 52J (R)

: Continuity should exist. : Continuity should exist.

OK or NG

OK	>> GO TO 3.
NG	>> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT А Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R). 51J (W) - 6 (W) : Continuity should exist. Data link connector 52J (R) - 14 (R) : Continuity should exist. 14 6 OK or NG SMJ harness connector O CONNECTOR 6, 14 SMJ OK >> Connect all the connectors and diagnose again. Refer to 51J, 52J LAN-237, "Work Flow" . Ω NG >> Repair harness. D PKIA6834E Circuit Check Between Data Link Connector and IPDM E/R UKS001GD **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. F 2. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side). Harness connector M31 Harness connector E152 OK or NG Н OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect harness connector M31. 1. 2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G BAT (R). Data link connector LAN 6 (W) - 31G (W) : Continuity should exist. 14 14 (R) - 42G (R) : Continuity should exist. 6 SMJ harness connector 6, 14 SMJ O CONNECTOR OK or NG 31G, 42G OK >> GO TO 3. Ω NG >> Repair harness. Μ PKIA6835E 3. CHECK HARNESS FOR OPEN CIRCUIT Disconnect IPDM E/R connector. 1. Check continuity between harness connector E152 terminals 2. 31G (W), 42G (R) and IPDM E/R harness connector E122 termi-BAT nals 39 (W), 40 (R). IPDM E/R connector 31G (W) - 39 (W) : Continuity should exist. SMJ harness connector 40 39 42G (R) - 40 (R) : Continuity should exist. CONNECTOR SMJ OK or NG 31G, 42G 39, 40 OK >> Connect all the connectors and diagnose again. Refer to Ω

LAN-237, "Work Flow" .

NG >> Repair harness.

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Revision: April 2004

LAN-255

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ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R)

: Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM and A/T assembly.



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TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Driver Seat Control Unit Circuit Check 1. CHECK CONNECTOR	UKS001GG
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose comharness side). Driver seat control unit connector Harness connector P1 Harness connector B37 OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT 	nection (control unit side and
1. Disconnect driver seat control unit connector.	
 Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R). 	
3 (W) - 19 (R) : Approx. 54 - 66Ω	R. المراجع (ARS.
OK or NG OK >> Replace driver seat control unit. NG >> Repair harness between driver seat control unit and harness connector B69.	
	РКІА6842Е
Combination Meter Circuit Check 1. CHECK CONNECTOR	UKS001GH
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage, bend and and harness side). 	loose connection (meter side
OK or NG	
OK>> GO TO 2.NG>> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect combination meter connector.	
 Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R). 	
11 (W) - 12 (R) : Approx. 54 - 66Ω	

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



BCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-25, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Diagnose again. Refer to LAN-237, "Work Flow".
- NG >> Repair harness between data link connector and combination meter.



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1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 3. Check terminals and connector of transfer control unit for damage, bend and loose connection (control unit side and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect transfer control unit connector. 1. 2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R). BAT 1 (W) - 2 (R) : Approx. 54 - 66 Ω Transfer control unit connector OK or NG OK >> Replace transfer control unit. NG >> Repair harness between transfer control unit and harness connector E152. Ω

ABS Actuator and Electric Unit (Control Unit) Circuit Check 1. CHECK CONNECTOR

1. Turn ignition switch OFF.

2. Disconnect the negative battery terminal.

Transfer Control Unit Circuit Check

3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace ABS actuator and electric unit (control unit).
- NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



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IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 108 - 132Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

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Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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Schematic



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Work Flow

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1. When there are no indications of "AUTO DRIVE POS.", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	BCM	
	START (NISSAN BASED VHCL)	METEB A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS	
(/	WORK SUPPORT	DTC RESULTS TIME	
	SELF-DIAG RESULTS		
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		F.F.DATA	
	Scroll Down	ERASE PRINT	
	BACK LIGHT COPY	MODE BACK LIGHT COPY	

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.



- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-269</u>, "CHECK <u>SHEET</u>".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>269, "CHECK SHEET"</u>.

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. Check CAN communication line of the navigation system. Refer to <u>AV-149</u>, "CAN Communication Line <u>Check"</u>.
- 7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to <u>LAN-269</u>, <u>"CHECK SHEET"</u>.

LAN-267

 Mark the "NG" or "UNKWN" item of the check sheet table with "v" from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to <u>LAN-269</u>, "CHECK SHEET".
 NOTE:

If "NG" is displayed on "CAN COMM" as "CAN DIAG SUPPORT MONITOR" for the diagnosed control unit, replace the control unit. Refer to <u>AV-149</u>, "CAN Communication Line Check".

9. According to the check sheet results (example), start inspection. Refer to <u>LAN-271, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>.

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" for the diagnosed control unit, replace the control unit.

Initial Tansmit diagnosis Tansmit diagnosis Tensmit diagnosis Control MWDW VDCTCS IPD MER Anto India Mickin W UNKWN UNKWN UNKWN UNKWN UNKWN India MWDWN - India MWDWN - India MWDWN India MWDWN			L	T	1	CAN DIA	G SUPPO	RT MNTR				
diagnosis ECM TCM METER MAA BCM MAA Pfont air MAX MCM VDC/TCS MAX PDM ER MAX ENGINE - NG UNKWN -	SELECT SYST	EM screen	Initial	Transmit		1	Rec	eive diagr	nosis	1		
ENGINE - NG UNKWN - UNKWN UNKWN UNKWN - - - UNKWN - UNKWN -<			diagnosis	diagnosis	ECM	ТСМ	METER	BCM /SEC	Front air	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
AT - NG UNKWN UNKWN UNKWN - - UNKWN - - UNKWN - - - UNKWN	ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN	_	UNKWN
AUTO DRIVE POS No indication NG UNKWN - UNKWN UNKWN UNKWN	A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	-	UNKWN	_	_
Sepley control unt CAN COMM CAN CIRC 1 CAN CIRC 3 CAN CIRC 5 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 4 AN indication NG UNKWN UNKWN ALL MODE AMDIAWD ABS - NG UNKWN UNKWN N N UNKWN ABS - UNKWN N N INKWN UNKWN 	AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	_	-	_
BCM No ING UNKWN UNKWN I	Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	_	CAN CIRC 7
ALL MODE AWD 4WD - NG UNKWN UNKWN UNKWN UNKWN - ABS - NG UNKWN UNKWN	BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	_	-	_	UNKWN
ABS - NG UNKWN UNKWN - <t< td=""><td>ALL MODE AWD/4WD</td><td>-</td><td>NG</td><td>UNKWN</td><td>UNKWN</td><td>UNKWN</td><td>_</td><td>_</td><td>-</td><td>_</td><td>UNKWN</td><td>_</td></t<>	ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	UNKWN	_
IPDM E/R No indication - UNKWN - </td <td>ABS</td> <td>_</td> <td>NG</td> <td>UNKWN</td> <td>UNKWN</td> <td>_</td> <td>-</td> <td>_</td> <td>_</td> <td>-</td> <td>_</td> <td>_</td>	ABS	_	NG	UNKWN	UNKWN	_	-	_	_	-	_	_
Symptoms : Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM Attach copy of Attach copy of display control unit CAN DIAG SUPPORT MONITOR check sheet	IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	UNKWN	-	_	_	—
Attach copy of display control unit CAN DIAG SUPPORT MONITOR check sheet			Attac SELEC	h copy of T SYSTE№	И		, SE	Attach cop LECT SY:	y of STEM			
				CAN DIA	Att displa AG SUPPC	ach copy o ay control DRT MONI	of unit TOR chec	k sheet				

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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-286, "Circuit Check Between TCM</u> and <u>Driver Seat Control Unit"</u>.

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	FM screen	Initial	Transmit			Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/
ENGINE	—	NG	UNKWN	-	UNKWN		UNKWN	—	UNKWN	—	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	-	UNKWN	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CAC 3	-	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	_	-	CAN CIRC
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	_	-	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	_	-	-	UNKWN	-
ABS	_	NG	UNKWN	UNKIN	-	_	-	_	-	_	_
IPDM E/R	No indication	-	UNKWN		_	_	UNKWN	_	_	_	_



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Case 2

Check harness between driver seat control unit and data link connector. Refer to <u>LAN-287</u>, "Circuit Check <u>Between Driver Seat Control Unit and Data Link Connector</u>".

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	FM screen	Initial	Transmit			Rec	eive diagr	nosis			
	LW Screen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN		_		_	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	—	-	UNKWN	_	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CAC 3	-	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKIWN	UNKWN	_	-	_	_	UNKWN	_
ABS	-	NG	UNKWN	UNKIN	_	_	_	_	_	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_



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Case 3

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-288, "Circuit Check Between Data</u> <u>A</u> <u>Link Connector and IPDM E/R"</u>.

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	FM screen	Initial	Transmit			Rec	eive diagr	iosis			
	LINISCICCI	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	_	UNKWN	-	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	Ι	-	CAN CAC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	_	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-	-	_	-	UNKWN	_
ABS	_	NG	UNKWN	UNKIN	_	_	-	_	-	_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_



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Check ECM circuit. Refer to LAN-289, "ECM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	FM screen	Initial	Transmit	Receive diagnosis							
0222010101	LW Serven	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNK	-	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	-	UNKWN	-	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CAC 3	-	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	_	-	CAN CIRC [·]
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	_	_	-	-	UNKWN	_
ABS	-	NG	UNKWN	UNKIVN	-	_	_	-	-	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	-	_	_



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Case 5

Check TCM circuit. Refer to LAN-289, "TCM Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR					
SELECT SYST	FM screen	Initial	Transmit		Receive diagnosis							
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F	
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN	_	UNKWN	
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	-	UNKWN	_	-	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	-	_	-	
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 7	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	_	-	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	—	-	-	UNKWN	-	
ABS	_	NG	UNKWN	UNKWN	-	_	_	-	-	-	-	
IPDM E/R	No indication	-	UNKWN	UNKWN	_	—	UNKWN	_	-	_	-	



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Check driver seat control unit circuit. Refer to LAN-290, "Driver Seat Control Unit Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit			Rec	eive diagr	nosis			
022201 0101		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN		UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	—	-	UNKWN	-	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_		UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	-	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	-	_	-	-	-	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	-	-	-	_



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Case 7

Check combination meter circuit. Refer to LAN-290, "Combination Meter Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	FM screen	Initial	Transmit			Rec	eive diagr	nosis			
	LW Serven	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN		UNKWN	-	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKWN	-		_	-	UNKWN	_	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN		UNKWN	-	-	_	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CRC 5	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC [·]
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	_	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	-	_	-	-	-	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_



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Check display control unit circuit. Refer to LAN-291, "Display Control Unit Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	FM screen	I screen Initial diagnosis d - NG - NG - NG - NG - CAN COMM - NG	Transmit			Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	UNKWN	—	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	—	-	UNKWN	-	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	-	_	-
Display control unit	-	CAN COMM		CAN CRC 3	-	CAN CRC 5	CAN CRC 2	CAN CRC 4	_	-	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	-	-	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	—	-	-	_	-	—	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_



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Case 9

Check BCM circuit. Refer to LAN-291, "BCM Circuit Check" .

					CAN DIAG	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit			Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKIWN	_	UNKWN		UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	-	UNKWN	-	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	-	-	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CRC 2	CAN CIRC 4	-	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	_	-	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-	_	_	—	UNKWN	—
ABS	-	NG	UNKWN	UNKWN	-	-	-	-	—	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	-	_



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Check data link connector circuit. Refer to LAN-292, "Data Link Connector Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit			Rec	eive diagr	iosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN	_	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	—	-	UNKWN	I	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	-	_	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	_	-	CAN CIRC [·]
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	-	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	—	—	-	-	UNKWN	—
ABS	-	NG	UNKWN	UNKWN	-	_	—	—	-		-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	UNKWN	-	-	_	_



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Case 11

Check front air control circuit. Refer to LAN-292, "Front Air Control Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	FM screen	Initial	Transmit			Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	—	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	—	-	UNKWN	-	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	CAN CRC 4	_	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	_	_	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	-	-	-	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	-	_	-	_	-	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	-	-	—	_



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Check transfer control unit circuit. Refer to LAN-293, "Transfer Control Unit Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial Initial diagnosis diag NG UN NG UN CAN COMM CAN NG UN NG UN NG UN	Transmit			Rec	eive diagr	nosis			
0222010101	LW Serveri	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	UNKWN	-	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	—	-	UNKWN	-	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	-	-	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	_	-	CAN CIRC
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	-	UNKWN
ALL MODE AWD/4WD	-	NG			UNKWN	_	_	-	-	UNKWN	_
ABS	-	NG	UNKWN	UNKWN	-	_	_	_	-	_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_



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Case 13

А Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-293, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	FM screen	Initial	Transmit			Rec	eive diagr	iosis			
022201 0101	LW Serven	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	UNKWN	—	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	_	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	-	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	_	-	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	UNKWN	_
ABS	_	N	UNK	UNKAVN	-	-	-	_	_	-	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	—	UNKWN	_	_	_	_



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Check IPDM E/R circuit. Refer to LAN-294, "IPDM E/R Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit			Rec	eive diagr	nosis			
	LW Serven	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN		UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	—	-	UNKWN	-	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	_	-	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	—	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	-	_	_	_	—	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	-	_	_	_



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Case 15

Check CAN communication circuit. Refer to LAN-294, "CAN Communication Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	FM screen	Initial	Transmit			Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	UNKWN	_	UNKWN
A/T	_	NG	UNKWN	UNKIWN	-	UNKWN	_	-	UNKWN	_	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	-	_	_
Display control unit	_	CAN COMM	CAN CRC 1	CAN CAC 3	-	CAN CAC 5	CAN CRC 2	CAN CRC 4	-	-	
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	_	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNK	UNKWN	UNKWN	-	_	-	-	UNKWN	_
ABS	_	NZ	UNKVN	UNKIN	-	-	-	_	-	-	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_

Case 16

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-295, "IPDM E/R Ignition Relay</u> <u>Circuit Check"</u>.

					CAN DIAG	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial Transm diagnosis diagnos NG UNKWI NG UNKWI NG UNKWI CAN COMM CAN CIRC NG UNKWI NG UNKWI	Transmit			Rec	eive diagr	nosis			
	LWSCIECH	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	UNKWN	—	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	—	-	UNKWN	_	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	-	-	_	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	-	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	_	_	_	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	_	_	_	_	-	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	—	UNKWN	-	-	—	-

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Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-295, "IPDM E/R Ignition Relay Circuit Check" .

					CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	FM screen	Initial	Transmit			Rec	eive diagr	nosis			
022201 0101		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	-	UNKWN	_	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	—	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	—	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	-	_	-	_	-	-	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12
 - (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)

: Continuity should exist. : Continuity should exist.

OK or NG

- >> GO TO 3. OK NG
 - >> Repair harness.

22 BAT A/T assembly connector Harness connector 3 1112 8 3, 8 12, 11 Ω PKIA6831E



OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

- 51J (W) 6 (W) 52J (R) - 14 (R)
- : Continuity should exist. : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-267, "Work Flow".
- NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector M31.
- Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).
 - 6 (W) 31G (W) 14 (R) - 42G (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).
 - 31G (W) 39 (W) 42G (R) - 40 (R)

: Continuity should exist.

: Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-267, "Work Flow".

NG >> Repair harness.


	[CAN]
ECM Circuit Check	UKS001GZ
. CHECK CONNECTOR	
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose conne and harness side). ECM connector Harness connector E19 Harness connector F33 OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT	ction (control module side
1 Disconnect ECM connector	
2. Check resistance between ECM harness connector E16 termi-	
nals 94 (W) and 86 (R). 94 (W) - 86 (R) : Approx. 108 - 132Ω	
OK or NG	
NG >> Repair harness between ECM and A/T assembly.	86 94
TCM Circuit Check 1. CHECK CONNECTOR	UKS001H0
1. Turn ignition switch OFF.	
 Disconnect the negative battery terminal. Check terminals and connector of A/T assembly for damage, bend and loose c 	onnection (control module
side and harness side)	
Side and hamess side).	
OK or NG OK >> GO TO 2.	
$\frac{OK \text{ or NG}}{OK} >> \text{ GO TO 2.}$ $NG \qquad >> \text{ Repair terminal or connector.}$	
OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT	
OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect A/T assembly connector.	
OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect A/T assembly connector. 2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).	
OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect A/T assembly connector. 2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R). 3 (W) - 8 (R) : Approx. 54 - 66Ω	T.S. assembly connector

Driver Seat Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side).
- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace driver seat control unit.
- NG >> Repair harness between driver seat control unit and harness connector B69.



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Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 3. Check terminals and connector of display control unit for damage, bend and loose connection (control unit side and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect display control unit connector. 1. 2. Check resistance between display control unit harness connector M95 terminals 25 (W) and 26 (R). BAT 25 (W) - 26 (R) : Approx. 54 - 66 Ω Display control unit connector

OK or NG

OK >> Replace display control unit.

Display Control Unit Circuit Check

NG >> Repair harness between display control unit and data link connector.



BCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-25, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: **Approx. 54 - 66**Ω

OK or NG

- OK >> Diagnose again. Refer to LAN-267, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.



Front Air Control Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of front air control for damage, bend and loose connection (unit side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect front air control connector.
- 2. Check resistance between front air control harness connector M50 terminals 34 (W) and 35 (R).

34 (W) - 35 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace front air control.
- NG >> Repair harness between front air control and data link connector.



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 2. Disconnect the negative battery terminal. 3. Check terminals and connector of transfer control unit for damage, bend and loose connection unit side and harness side). OK or NG OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect transfer control unit connector. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R). 1 (W) - 2 (R) Approx. 54 - 66Ω OK or NG OK or NG OK >> Replace transfer control unit. NG >> Repair harness between transfer control unit and harness connector E152. 	
 3. Check terminals and connector of transfer control unit for damage, bend and loose connection unit side and harness side). <u>OK or NG</u> OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect transfer control unit connector. 2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R). 1 (W) - 2 (R) : Approx. 54 - 66Ω OK or NG OK >> Replace transfer control unit. NG >> Replace transfer control unit. NG >> Replace transfer control unit. 	
$\frac{OK \text{ or NG}}{OK} \implies GO TO 2.$ $NG \implies Repair terminal or connector.$ 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect transfer control unit connector. 2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R). $1 (W) - 2 (R) \qquad : Approx. 54 - 66\Omega$ $\frac{OK \text{ or NG}}{OK} \implies Replace transfer control unit.$ $NG \implies Replace transfer control unit.$	(control
$\begin{array}{llllllllllllllllllllllllllllllllllll$	
 NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect transfer control unit connector. 2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R). 1 (W) - 2 (R) Approx. 54 - 66Ω OK or NG OK >> Replace transfer control unit. NG >> Replace transfer control unit. NG >> Replace transfer control unit. 	
 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect transfer control unit connector. 2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R). 1 (W) - 2 (R) Approx. 54 - 66Ω OK or NG OK or NG OK >> Replace transfer control unit. NG >> Repair harness between transfer control unit and harness connector E152. 	
 Disconnect transfer control unit connector. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R). (W) - 2 (R) Approx. 54 - 66Ω OK or NG Replace transfer control unit. NG Repair harness between transfer control unit and harness connector E152. 	
 2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R). 1 (W) - 2 (R) : Approx. 54 - 66Ω OK or NG OK >> Replace transfer control unit. NG >> Repair harness between transfer control unit and harness connector E152. 	
1 (W) - 2 (R): Approx. 54 - 66Ω OK or NG OK>> Replace transfer control unit. NG>> Replair harness between transfer control unit and harness connector E152.Transfer control unit connector	
OK or NG OK >> Replace transfer control unit. NG >> Repair harness between transfer control unit and harness connector E152.	
OK >> Replace transfer control unit. NG >> Repair harness between transfer control unit and harness connector E152.	
NG >> Repair harness between transfer control unit and harness connector E152.	
ness connector E152.	
	PKIA9745E

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.

Transfer Control Unit Circuit Check

1. CHECK CONNECTOR

3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace ABS actuator and electric unit (control unit).
- NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.





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IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

- OK >> GO TO 2.
- NG >> Repair or replace as necessary.



Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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BKWA0150E



Revision: April 2004

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Work Flow

1. When there are no indications of "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	ВСМ	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "DIFF LOCK", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG F	RESULTS		
(WORK SUPPORT	DTC RESULTS			
	SELF-DIAG RESULTS	CAN COMM CIRC			
	DATA MONITOR				
	DATA MONITOR (SPEC)				
	CAN DIAG SUPPORT MNTR				
	ACTIVE TEST				
			F.F.DATA		
	Scroll Down	ERASE	PRINT		
	BACK LIGHT COPY	MODE BACK L	IGHT COPY	PKIA8260	E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "DIFF LOCK", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	CAN DIAG SUPPORT MNTR	
(Example)		ENGINE	
	WORK SUPPORT	PRSNT	
	SELE-DIAG BESULTS	INITIAL DIAG OK	
		TRANSMIT DIAG OK	
	DATA MONITOR	TCM OK	
	DATA MONITOB (SPEC)	 VDC/TCS/ABS OK	
	Britt Month (er 20)	METER/M&A OK	
	CAN DIAG SUPPORT MNTR	ICC UNKWN	
		BCM/SEC OK	
	ACTIVE TEST	IPDM E/R OK	
		AWD/4WD/e4WD UNKWN	
	Scroll Down	PRINT Scroll Down	
	BACK LIGHT COPY	MODE BACK LIGHT COPY	PKIA8343E

- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-302</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>302</u>, "CHECK SHEET".

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-304</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

LAN-301

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Check sheet table	9										
						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive	diagnosis			
	LWBBRCCH	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	_	-	-	-	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	-	_	-	-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	UNKWN	—	—
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	—	UNKWN	-	_	_

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

PKIA9332E



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and differential lock control unit. Refer to <u>LAN-317, "Circuit Check Between</u> <u>TCM and Differential Lock Control Unit"</u>.

						CAN DIA	G SUPPOI	RT MNTR			
	EM screen	Initial	Transmit				Receive	diagnosis			
	EW SCICCI	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	-	UNKWN	-	UNKWN	UNKIVN	UNK	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_		UNI	_
DIFF LOCK	_	NG	UNKWN	UNKWN	—	_	-	_	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN		_	-	UNKWN	_	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNK	_	_	_	_	UNKWN	
ABS	_	NG	UNKWN	UNK	UNKIVN	UNKWN	—	_	UNKWN	—	-
IPDM E/R	No indication	-	UNKWN	UNKWN	—	—	_	UNKWN	_	_	-

PKIA9427E



Check harness between differential lock control unit and data link connector. Refer to <u>LAN-318</u>, "Circuit Check <u>A</u> <u>Between Differential Lock Control Unit and Data Link Connector</u>".

			CAN DIAG SUPPORT MNTR												
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis							
	LIN Sorcen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R				
ENGINE	_	NG	UNKWN	_	UNKWN	—	UNK	UNKWN	UNKWN	UNK	UNKWN				
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	UNKWN	_				
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	-	_	UNKWN	UNKWN	_				
BCM	No indication	NG	UNKWN	UNK	—	_	UNKWN	_	-	_	UNKWN				
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN		_	_	_	_	UNKWN	_				
ABS	_	NG	UNKWN	UNKWN			-	_	UNKWN	_	_				
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_				



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Check harness between data link connector and IPDM E/R. Refer to <u>LAN-319</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

						CAN DIA	G SUPPOI	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis								
	LIN Sorcen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	-		UNKWN	_	
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	-	_	UNKWN	UNKWN	_	
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	-	_	_	UNKIVN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN		_	_	_	_	UNKWN	_	
ABS	_	NG	UNKWN	UNKWN	UNKWN		_	_	UNKWN	_	—	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	





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Case 4

Check ECM circuit. Refer to LAN-320, "ECM Circuit Check" .

			CAN DIAG SUPPORT MNTR											
SELECT SYST	EM screen	Initial	Transmit		Receive diagnosis									
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	-	NG		_	UNKWN	_	UNK	UNKWN	UNK	UNKWN	UNKWN			
A/T	_	NG	UNKWN		_	_	UNKWN	-	UNKWN	UNKWN	_			
DIFF LOCK	_	NG	UNKWN		_	_	-	—	UNKWN	UNKWN	_			
BCM	No indication	NG	UNKWN	UNKWN	—	-	UNKWN	-	-	—	UNKWN			
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	—	-	—	UNKWN	—			
ABS	_	NG	UNKWN		UNKWN	UNKWN	_	-	UNKWN	—				
IPDM E/R	No indication	-	UNKWN	UNKWN	—	—	-	UNKWN	—	—	_			



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Check TCM circuit. Refer to LAN-320, "TCM Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR					
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis									
	LIN Soreen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	-	NG	UNKWN	_	UNK	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN		_	_	UNKWN	-		UNKWN	_		
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	—	UNKWN	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	_		UNKWN	_	_		UNKWN		
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNK	_	—	-	—	UNKWN	_		
ABS	_	NG	UNKWN	UNKWN	UNKIVN	UNKWN	_	-	UNKWN	Ι			
IPDM E/R	No indication	-	UNKWN	UNKWN	—	—	—	UNKWN	-	—	—		



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Case 6

Check differential lock control unit circuit. Refer to LAN-321, "Differential Lock Control Unit Circuit Check".

						CAN DIA	G SUPPOI	RT MNTR			
	EM screen	Initial	Tranomit				Receive	diagnosis			
	LINISCICCI	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	UNKWN	_
DIFF LOCK	_	NG		UNKWN	—	_	_	_	UNKWN	UNK	_
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	-	_	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	-	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	—	—
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Check combination meter circuit. Refer to LAN-321, "Combination Meter Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	-	UNK	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_		-	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	—	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	-	—		-	-	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	—	-	—	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNKWN	—	_
IPDM E/R	No indication	-	UNKWN	UNKWN	—	—	-	UNKWN	_	-	_
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Case 8

Check BCM circuit. Refer to LAN-322, "BCM Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	—	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	-	_	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	—	-	_	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNKWN	—	
IPDM E/R	No indication	-	UNKWN	UNKWN	_	—	_	UNKVN	_	_	_



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Check data link connector circuit. Refer to LAN-322, "Data Link Connector Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
	EM screen	Initial	Tranamit				Receive	diagnosis			
	EW SCICCI	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	UNKWN	_
DIFF LOCK	-	NG	UNKWN	UNKWN	_	_	-	—	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	—	_	-	_	UNKWN	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	—
IPDM E/R	No indication	-	UNKWN	UNKWN	_	—	_	UNKWN	_	—	_
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Case 10

Check transfer control unit circuit. Refer to LAN-323, "Transfer Control Unit Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
	LIN Soreen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	UNK	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_		UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	—	_	_	UNK	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	_	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKAVN	UNKWN		_	_	—	-	UNKWN	-
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-		-	—
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	-	UNKWN	_	_	_



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Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-323</u>, "ABS Actuator and Electric Unit (<u>Control Unit</u>) <u>Circuit Check</u>".

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Tronomit				Receive	diagnosis			
	EWBORCCH	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNK	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	UNKWN	_
DIFF LOCK	-	NG	UNKWN	UNKWN	_	_	-	_	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	UNKWN	_
ABS	-	N	UNKWN	UNKWN	UNK	UNKIWN	_	_		_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_





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Case 12

Check IPDM E/R circuit. Refer to LAN-324, "IPDM E/R Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
	EM screen	Initial	Tranomit				Receive	diagnosis			
SELECT STOP	EW SCICCI	diagnosis	diagnosis	ECM	ТСМ	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	_	UNKWN	_	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	_	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	-	—	UNKVN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	—	—	—	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	UNKWN	Ι	_
IPDM E/R	No indication	-	UNKWN	UNKWN	—	—	_	UNKWN	—	-	_



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Check CAN communication circuit. Refer to LAN-324, "CAN Communication Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	-	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN		_	_		-	UNKWN	UNKWN	-
DIFF LOCK	-	NG		UNKWN	_	-	-	—	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	_	—	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	-	NG	UNK	UNKWN	UNK	_	-	-	-	UNKWN	-
ABS	-	N	UNKWN	UNKWN	UNK	UNKWN	_	-		_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	_	UNKWN	_	—	—

Case 14

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Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-325</u>, "IPDM E/R Ignition Relay <u>Circuit Check"</u>.

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
	LIN Soleen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_		_	UNKWN	UNKWN	UNKWN	UNKVN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_		_	—	UNKWN	UNK	_
BCM	No indication	NG	UNKWN	UNKWN	_	—	UNKWN	-	—	_	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNK	_	—	-	—	UNKVN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN		-	UNKWN	_	—
IPDM E/R	No indication	—	UNKWN	UNKWN	_	—	_	UNKWN	—	_	—
											PKIA9440E

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-325, "IPDM E/R Ignition Relay А Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR			
SELECT SYST	EM screen	Initial	Tranomit				Receive	diagnosis			
	LIN Sorcen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN		_	_		_		UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	-	_	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	_	_	-	UNKWN	_
ABS	_	NG	UNKWN		UNKWN	UNK	-	_		_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	_	UNKWN	-	-	_

Circuit Check Between TCM and Differential Lock Control Unit **1. CHECK CONNECTOR**

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- Check continuity between A/T assembly harness connector F9 2. terminals 3 (W), 8 (R) and harness connector F33 terminals 12
 - (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)

- : Continuity should exist.
 - : Continuity should exist.



- OK >> GO TO 3. NG
 - >> Repair harness.



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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).
 - 12 (W) 2 (W) 11 (R) - 1 (R)

: Continuity should exist.

: Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



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connector

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Differential lock control unit

PKIA9746E

BAT

Harness connector

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4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect differential lock control unit connector.
- Check continuity between harness connector B75 terminals 2 (W), 1 (R) and differential lock control unit harness connector B77 terminals 5 (W), 4 (R).
 - 2 (W) 5 (W)
 - 1 (R) 4 (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-301, "Work Flow".
- NG >> Repair harness.

Circuit Check Between Differential Lock Control Unit and Data Link Connector

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect differential lock control unit connector and harness connector B69.
- 2. Check continuity between differential lock control unit harness connector B77 terminals 5 (W), 4 (R) and harness connector B69 terminals 51J (W), 52J (R).

5 (W) - 51J (W) 4 (R) - 52J (R)

: Continuity should exist. : Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT А Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R). 51J (W) - 6 (W) : Continuity should exist. Data link connector 52J (R) - 14 (R) : Continuity should exist. 14 6 OK or NG SMJ harness connector O CONNECTOR 6, 14 SMJ OK >> Connect all the connectors and diagnose again. Refer to 51J, 52J LAN-301, "Work Flow" . Ω NG >> Repair harness. D PKIA6834E Circuit Check Between Data Link Connector and IPDM E/R UKS001HK Ε **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. F 2. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side). Harness connector M31 Harness connector E152 OK or NG Н OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect harness connector M31. 1. 2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G BAT (R). Data link connector LAN 6 (W) - 31G (W) : Continuity should exist. 14 14 (R) - 42G (R) : Continuity should exist. 6 SMJ harness connector 6, 14 SMJ O CONNECTOR OK or NG 31G, 42G OK >> GO TO 3. Ω NG >> Repair harness. Μ PKIA6835E 3. CHECK HARNESS FOR OPEN CIRCUIT Disconnect IPDM E/R connector. 1. Check continuity between harness connector E152 terminals 2. 31G (W), 42G (R) and IPDM E/R harness connector E122 termi-BAT nals 39 (W), 40 (R). IPDM E/R connector 31G (W) - 39 (W) : Continuity should exist. SMJ harness connector 40 39 42G (R) - 40 (R) : Continuity should exist. CONNECTOR SMJ OK or NG 31G, 42G 39, 40 OK >> Connect all the connectors and diagnose again. Refer to

Revision: April 2004

LAN-319

LAN-301, "Work Flow" .

NG >> Repair harness.



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ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R)

: Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM and A/T assembly.



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TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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	[CAN]
Differential Lock Control Unit Circuit Check	UK\$0020.
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of differential lock cor (control unit side and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	ntrol unit for damage, bend and loose connection
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect differential lock control unit connector. Check resistance between differential lock control unit connector B77 terminals 5 (W) and 4 (R). 	
5 (W) - 4 (R): Approx. 54 - 66Ω OK or NGOKOK>> Replace differential lock control unit.NG>> Repair harness between differential lock control	I unit and
namess connector B75.	
Combination Meter Circuit Check 1. CHECK CONNECTOR	UKS001HN
1. Turn ignition switch OFF.	or damage, bend and loose connection (meter side
 Disconnect the negative battery terminal. Check terminals and connector of combination meter for and harness side). 	
 Disconnect the negative battery terminal. Check terminals and connector of combination meter for and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	
 Disconnect the negative battery terminal. Check terminals and connector of combination meter for and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT 	
 Disconnect the negative battery terminal. Check terminals and connector of combination meter for and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect combination meter connector. Check resistance between combination meter harness tor M24 terminals 11 (W) and 12 (R). 	S CONNECT

BCM Circuit Check

1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-25, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Diagnose again. Refer to LAN-301, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.



1. Tu	urn ignition switch OFF.		
2. D	isconnect the negative l	battery terminal.	
3. C u	heck terminals and cor hit side and harness sid	nnector of transfer control unit for date	mage, bend and loose connection (cont
OK or	NG		
OK	>> GO TO 2.		
NG	>> Repair terminal o	r connector.	
2 0			
2.0			
1. D	isconnect transfer contr	ol unit connector.	
1. D 2. C to	isconnect transfer contr heck resistance betwee r E142 terminals 1 (W)	rol unit connector. en transfer control unit harness conne and 2 (R).	
1. D 2. C to	isconnect transfer contr heck resistance betwee r E142 terminals 1 (W) 1 (W) - 2 (R)	rol unit connector. en transfer control unit harness conne and 2 (R). : Approx. 54 - 66Ω	C- BAT DISCONNECT HS.
1. D 2. C to	isconnect transfer contr heck resistance betwee r E142 terminals 1 (W) 1 (W) - 2 (R)	rol unit connector. en transfer control unit harness conne and 2 (R). : Approx. 54 - 66Ω	C-
1. D 2. C to <u>OK or</u>	isconnect transfer contr heck resistance betwee r E142 terminals 1 (W) 1 (W) - 2 (R) <u>NG</u>	rol unit connector. en transfer control unit harness conne and 2 (R). : Approx. 54 - 66 Ω	C-
1. D 2. C to OK or OK NG	isconnect transfer contr heck resistance betwee r E142 terminals 1 (W) 1 (W) - 2 (R) <u>NG</u> >> Replace transfer >> Repair harness b	rol unit connector. en transfer control unit harness conne and 2 (R). : Approx. 54 - 66 Ω control unit. between transfer control unit and ha	C- DISCONNECT Transfer control unit connector IT-
1. D 2. C to OK or OK NG	isconnect transfer contr heck resistance betwee r E142 terminals 1 (W) 1 (W) - 2 (R) <u>NG</u> >> Replace transfer >> Repair harness b ness connector E	rol unit connector. en transfer control unit harness conne and 2 (R). : Approx. 54 - 66 Ω control unit. between transfer control unit and ha	C- Transfer control unit connector Ir-
1. D 2. C to <u>OK or</u> OK NG	isconnect transfer contr heck resistance betwee r E142 terminals 1 (W) 1 (W) - 2 (R) <u>NG</u> >> Replace transfer >> Repair harness b ness connector E	rol unit connector. en transfer control unit harness conne and 2 (R). : Approx. 54 - 66 Ω control unit. between transfer control unit and ha	C- Transfer control unit connector III-

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace ABS actuator and electric unit (control unit).
- NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



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IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 108 - 132Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- A/T assembly
- Differential lock control unit
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

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• Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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Schematic



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 When there are no indications of "AUTO DRIVE POS.", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM	
		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	всм	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "DIFF LOCK", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESUL	rs
()	WORK SUPPORT	DTC RESULTS	TIME
	SELF-DIAG RESULTS		0
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		F.	F.DATA
	Scroll Down	ERASE PRI	NT
	BACK LIGHT COPY	MODE BACK LIGHT	COPY PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "DIFF LOCK", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.



- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-332</u>, "CHECK <u>SHEET</u>".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-332, "CHECK SHEET"</u>.

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-334</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Check sheet table	9										
						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tranomit				Receive	diagnosis			
	ENISOICON	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	_	UNKWN	-	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	-	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
всм	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	-	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	-	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM



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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and differential lock control unit. Refer to <u>LAN-349</u>, "Circuit Check Between <u>TCM and Differential Lock Control Unit</u>".

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tranemit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	—	UNIWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	UNKWN	_
DIFF LOCK	-	NG	UNKWN		—	—	—	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	—	_	—
BCM	No indication	NG	UNKWN		_	—	UNKWN	-	-	—	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	_	_	-	—	UNKWN	_
ABS	-	NG	UNKWN	UNKWN	UNK	UNKWN	—	-	UNKWN	—	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_

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Check harness between differential lock control unit and driver seat control unit. Refer to <u>LAN-350</u>, "Circuit <u>A</u> <u>Check Between Differential Lock Control Unit and Driver Seat Control Unit</u>".

						CAN DIA	G SUPPOR	RT MNTR			
SELECT SYST	EM screen	Initial	Tranomit				Receive	diagnosis			
	LWSGreen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	—	UNIWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	_		_	UNKWN	UNKWN	—
DIFF LOCK	_	NG	UNKWN	UNKWN	_	-	_	-	UNKWN	UNK	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN		Ι	—
BCM	No indication	NG	UNKWN	UNKWN	—	-	UNKWN	-	—	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN		-	—	-	_	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNK	UNKWN	—	-	UNKWN	—	_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	_	UNKWN	_	_	_



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Check harness between driver seat control unit and data link connector. Refer to <u>LAN-351</u>, "Circuit Check <u>Between Driver Seat Control Unit and Data Link Connector</u>".

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tronomit				Receive	diagnosis			
	LWISCICCI	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNIOWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	—	UNK	_	UNKWN	UNKWN	—
DIFF LOCK	_	NG	UNKWN	UNKWN	_	-	_	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	-	UNKWN	UNKWN	_	_	_
ВСМ	No indication	NG	UNKWN	UNKWN	_	-	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN			-	_	-	-	UNKWN	_
ABS	_	NG	UNKWN		UNKWN	UNKIVN	_	-	UNKWN	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	_	UNKWN	-	_	-



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Case 4

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А Check harness between data link connector and IPDM E/R. Refer to LAN-351, "Circuit Check Between Data Link Connector and IPDM E/R".

						CAN DIA	G SUPPOR	RT MNTR			
SELECT SYST	EM screen	Initial	Tranomit				Receive	diagnosis			
0111010101	LWSGreen	diagnosis	s diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	-		UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN			_	_	-	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNK	UNKWN	_	-	UNKWN	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Check ECM circuit. Refer to LAN-352, "ECM Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tranomit				Receive	diagnosis			
000000000	LWBGreen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNK	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN		_	-	_	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	_	_	_	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Case 6

Check TCM circuit. Refer to LAN-353, "TCM Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
012201 0101		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNK	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_		_	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	-	—	_	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	-	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	-	UNKWN	_	-	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	_	_	-	UNKWN	_
ABS	-	NG	UNKWN	UNKWN	UNKVN	UNKWN	—	-	UNKWN	—	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Check differential lock control unit circuit. Refer to LAN-353, "Differential Lock Control Unit Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tranemit				Receive	diagnosis			
	LWISCICCI	diagnosis	diagnosis	ECM	ТСМ	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	UNKWN	_
DIFF LOCK	_	NG		UNKIVN	—	_	_	-		UNK	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	_	—
BCM	No indication	NG	UNKWN	UNKWN	_	-	UNKWN	-	-	—	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	_	_	-	-	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	-	_	_



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Case 8

Check driver seat control unit circuit. Refer to LAN-354, "Driver Seat Control Unit Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tranemit				Receive	diagnosis			
0222010101	LINISCICCI	diagnosis	diagnosis	ECM	ТСМ	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	_	
BCM	No indication	NG	UNKWN	UNKWN	_	-	UNKWN	-	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Check combination meter circuit. Refer to LAN-354, "Combination Meter Circuit Check" .

				CAN DIAG SUPPORT MNTR									
	EM screen	Initial	Transmit	Receive diagnosis									
322201 3131	LIVISCICEI	diagnosis	diagnosis	ECM	ТСМ	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN	—	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	_		-	UNKWN	UNKWN	—		
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	—	-	UNKWN	UNKWN	—		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNK	UNKWN	-	_	_		
ВСМ	No indication	NG	UNKWN	UNKWN	_	-		-	_	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	UNKWN	_		
ABS	-	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	_	-		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_		



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Case 10

Check BCM circuit. Refer to LAN-355, "BCM Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR			
SELECT SYST	EM screen	Initial	Tranemit				Receive	diagnosis			
0222010101	diagnos		diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	—	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNK	_	_	_
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	-	—	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	-	UNKWN	—	-
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	_	UNKWN	_	_	_



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Check data link connector circuit. Refer to LAN-355, "Data Link Connector Circuit Check" .

		CAN DIAG SUPPORT MNTR										
SELECT SYST	FM screen	Initial	Tranamit	Receive diagnosis								
322201 3131	LINISCICEN	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	—	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	UNKWN	_	
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	_	UNKWN	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	_	_	
BCM	No indication	NG	UNKWN	UNKWN	_	-	UNKWN	-	-	_	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	UNKWN	—	
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_	
IPDM E/R	No indication	-	UNKWN	UNKWN	-	-	_	UNKWN	-	-	-	



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Case 12

Check transfer control unit circuit. Refer to LAN-356, "Transfer Control Unit Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR			
SELECT SYST	EM screen	Initial	Tranemit				Receive	diagnosis			
012201 0101	Liviooroon	diagnosis diagnosi		ECM	ТСМ	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	UNK	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	_	UNKWN	—	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	-		UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	-	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNK		_	_	_	_	UNK	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Case 13

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-356</u>, "ABS Actuator and Electric Unit (<u>Control Unit</u>) <u>Circuit Check</u>".

						CAN DIA	G SUPPO	RT MNTR			
	EM screen	Initial	Transmit				Receive	diagnosis			
322201 3131	LIVISCIECI	diagnosis	diagnosis	ECM	ТСМ	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	UNKWN	UNK	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	UNWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	-	_	_
ВСМ	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	-	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	UNKWN	_
ABS	_	NG		UNKIVN	UNKWN	UNKWN	_	-	UNKWN	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_



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Case 14

Check IPDM E/R circuit. Refer to LAN-357, "IPDM E/R Circuit Check" .

	CAN DIAG SUPPORT MNTR										
SELECT SYST	EM screen	Initial	Tranemit				Receive	diagnosis			
0222010101		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	UNKWN	_
DIFF LOCK	—	NG	UNKWN	UNKWN	Ι	_	—	_	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	—	—	_
ВСМ	No indication	NG	UNKWN	UNKWN	Ι	_	UNKWN		—	_	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	-	UNKWN	—	_
IPDM E/R	No indication	-	UNKWN	UNKWN	-	—	_	UNKWN	_	_	_



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Check CAN communication circuit. Refer to LAN-358, "CAN Communication Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR							
SELECT SYST	SYSTEM screen Initial Transm				Transmit Receive diagnosis										
000000000		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F				
ENGINE	_	NG	UNKWN	_	UNK	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN				
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	UNKWN	_				
DIFF LOCK	_	NG	UNKWN	UNKWN	—	_	_	-		UNK	_				
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	_	_	_				
BCM	No indication	NG	UNKWN	UNKWN	_	-	UNKWN	-	-	_	UNKWN				
ALL MODE AWD/4WD	_	NG				_	_	-	-	UNKWN	_				
ABS	_	V	UNKWN	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_	_				
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	_	UNKWN	_	_	_				

Case 16

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Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-358</u>, "IPDM E/R Ignition Relay <u>Circuit Check"</u>.

						CAN DIA	G SUPPO	RT MNTR						
	EM screen	Initial	Transmit	Receive diagnosis										
322201 3131	LIVISCICEI	diagnosis	diagnosis	ECM	ТСМ	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNK	UNKWN			
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	-	UNKWN	UNKWN	_			
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	-	UNKWN	UNKWN	_			
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	-	_	_			
ВСМ	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	-	_	_	UNKWN			
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	-	_	UNK	-			
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	-	-	UNKWN	_	-			
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	-	UNKWN	-	_	-			
											PKIA9457E			

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-358, "IPDM E/R Ignition Relay А Circuit Check" .

					CAN DIAG SUPPORT MNTR								
SELECT SYST	FM screen	Initial	Transmit	Receive diagnosis									
0222010101	Liniboreen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN		_	_	UNKWN	_	UNKWN	UNKWN	_		
DIFF LOCK	_	NG	UNKWN	UNKWN	_	-	—	-	UNKWN	UNKWN	-		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	_	-		
BCM	No indication	NG	UNKWN	UNKWN	—	-	UNKWN	-	_	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	_	-	_	UNKWN	-		
ABS	-	NG	UNKWN	UNK	UNKWN	UNKIVN	—	-	UNK	_	-		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	-	_	-		

Circuit Check Between TCM and Differential Lock Control Unit **1. CHECK CONNECTOR**

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- Check continuity between A/T assembly harness connector F9 2. terminals 3 (W), 8 (R) and harness connector F33 terminals 12
 - (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)

: Continuity should exist.

: Continuity should exist.



- OK >> GO TO 3. NG
 - >> Repair harness.



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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).
 - 12 (W) 2 (W) 11 (R) - 1 (R)

: Continuity should exist.

: Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect differential lock control unit connector.
- Check continuity between harness connector B75 terminals 2 (W), 1 (R) and differential lock control unit harness connector B77 terminals 5 (W), 4 (R).
 - 2 (W) 5 (W)
 - 1 (R) 4 (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-331, "Work Flow".
- NG >> Repair harness.

Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit

- 1. CHECK HARNESS FOR OPEN CIRCUIT
- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect differential lock control unit connector and harness connector B37.
- 4. Check continuity between differential lock control unit harness connector B77 terminals 5 (W), 4 (R) and harness connector B37 terminals 15 (W), 14 (R).
 - 5 (W) 15 (W)
 - 4 (R) 14 (R)
- : Continuity should exist. : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-331, "Work Flow".
- NG >> Repair harness.







- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector M31.
- Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).
 - 6 (W) 31G (W) 14 (R) - 42G (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.



- 1. Disconnect IPDM E/R connector.
- Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).
 - 31G (W) 39 (W) 42G (R) - 40 (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-331, "Work Flow".
- NG >> Repair harness.

ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.





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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of differential lock control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect differential lock control unit connector.
- 2. Check resistance between differential lock control unit harness connector B77 terminals 5 (W) and 4 (R).

5 (W) - 4 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace differential lock control unit.
- NG >> Repair harness between differential lock control unit and harness connector B75.



Driver Seat Control Unit Circuit Check

1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side).
- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- 2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace driver seat control unit.
- NG >> Repair harness between driver seat control unit and harness connector B69.



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Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-354





1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

OK or NG

- OK >> Diagnose again. Refer to LAN-331, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.

: **Approx. 54 - 66**Ω



Transfer Control Unit Circuit Check

1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of transfer control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect transfer control unit connector.
- 2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace transfer control unit.
- NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check 1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.



- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace ABS actuator and electric unit (control unit).
- NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



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IPDM E/R Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Disconnect the following module and control unit connectors and check terminals for deformation, discon-3. nection, looseness or damage.
- ECM
- A/T assembly
- Differential lock control unit
- Driver seat control unit
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- **IPDM E/R**

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2_{\cdot} check harness for short circuit

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Continuity should not exist.

OK or NG

- OK >> GO TO 3.
- NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

- 6 (W) Ground
- 14 (R) Ground
- : Continuity should not exist.
- : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-359, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" . NG





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IPDM E/R Ignition Relay Circuit Check

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection".
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START"

LAN-358

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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132



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System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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CAN SYSTEM (TYPE 12)

Schematic



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CAN SYSTEM (TYPE 12)

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BKWA0158E

CAN SYSTEM (TYPE 12)



BKWA0159E

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17 16 15 14 13 12 11 10 9 8 7

24 23 22

(E142)

W

21 20 19 18

[CAN]

Work Flow

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1. When there are no indications of "AUTO DRIVE POS.", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM	
· · ·		ENGINE	
	CONSULT- II	A/T	
		ABS	
		AIR BAG	
	ENGINE	BCM	
	START (NISSAN BASED VHCL)	METER A/C AMP	
	START (RENAULT BASED VHCL)		
	SUB MODE		
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "DIFF LOCK", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESULTS	
(WORK SUPPORT	DTC RESULTS TIME	
	SELF-DIAG RESULTS		
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		FEDATA	
	Scroll Down	ERASE PRINT	
	BACK LIGHT COPY	MODE BACK LIGHT COPY	PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "DIFF LOCK", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.



- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-367</u>, "CHECK <u>SHEET</u>".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-</u> <u>367, "CHECK SHEET"</u>.

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. Check CAN communication line of the navigation system. Refer to <u>AV-149</u>, "CAN Communication Line <u>Check"</u>.
- 7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to <u>LAN-367</u>, <u>"CHECK SHEET"</u>.

LAN-365

 Mark the "NG" or "UNKWN" item of the check sheet table with "v" from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to <u>LAN-367, "CHECK SHEET"</u>.
 NOTE:

If "NG" is displayed on "CAN COMM" as "CAN DIAG SUPPORT MONITOR" for the diagnosed control unit, replace the control unit. Refer to <u>AV-149</u>, "CAN Communication Line Check".

9. According to the check sheet results (example), start inspection. Refer to <u>LAN-369</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)</u>".

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" for the diagnosed control unit, replace the control unit.

SELECT SYSTEM screen Initial diagnosis Transmit diagnosis ENGINE — NG UNKWN A/T — NG UNKWN DIFF LOCK — NG UNKWN AUTO DRIVE POS No indication NG UNKWN Display control unit — CAN COMM CAN CIRC BCM No indication NG UNKWN ALL MODE AWD/4WD — NG UNKWN ABS — NG UNKWN PDM E/R No indication — UNKWN Symptoms :	ti is ECM J — J UNKWN J UNKWN J — 1 CAN CIRC 3 J UNKWN J UNKWN J UNKWN J UNKWN J UNKWN J UNKWN	TCM UNKWN 	DIFF LOCK UNKWN 	Rec METER /M&A UNKWN UNKWN CAN CIRC 5 UNKWN 	eive diagr BCM /SEC UNKWN — CAN CIRC 2 — UNKWN UNKWN	In the second se	AWD/4WD /e4WD UNKWN UNKWN 	VDC/TCS /ABS UNKWN UNKWN — — UNKWN —	IPDM E/F
diagnosis diagnosis NGINE – NG UNKWN /T – NG UNKWN DIFF LOCK – NG UNKWN UTO DRIVE POS. No indication NG UNKWN Display control unit – CAN COMM CAN CIRC ICM No indication NG UNKWN ILL MODE AWD/4WD – NG UNKWN BS – NG UNKWN PDM E/R No indication – UNKWN Symptoms :	is ECM I — I UNKWN I UNKWN I CAN CIRC 3 I UNKWN I UNKWN	TCM UNKWN 		Attach	UNKWN UNKWN CAN CIRC 2 UNKWN UNKWN	Front air control CAN CIRC 4 	AWD/4WD /e4WD UNKWN UNKWN UNKWN 	UNKWN UNKWN UNKWN UNKWN UNKWN UNKWN	IPDM E/F
INGINE - NG UNKWN VT - NG UNKWN DIFF LOCK - NG UNKWN NUTO DRIVE POS. No indication NG UNKWN Display control unit - CAN COMM CAN CIRC 3CM No indication NG UNKWN ALL MODE AWD/4WD - NG UNKWN NBS - NG UNKWN NBS - NG UNKWN NBS - NG UNKWN PDM E/R No indication - UNKWN Symptoms : - Stack cop Stack cop	J	UNKWN UNKWN UNKWN		UNKWN UNKWN CAN CIRC 5 UNKWN 	UNKWN UNKWN CAN CIRC 2 UNKWN UNKWN		UNKWN UNKWN 	UNKWN UNKWN UNKWN 	UNKWN CAN CIRC UNKWN UNKWN UNKWN
VT	UNKWN UNKWN UNKWN UCANCIRC3 UNKWN UNKWN UNKWN UNKWN UNKWN	UNKWN UNKWN UNKWN		UNKWN - UNKWN CAN CIRC 5 UNKWN	UNKWN CAN CIRC 2 - UNKWN		UNKWN UNKWN 	UNKWN UNKWN UNKWN UNKWN UNKWN	CAN CIRC UNKWN - -
DIFF LOCK - NG UNKWN UTO DRIVE POS. No indication NG UNKWN Display control unit - CAN COMM CAN CIRC 3CM No indication NG UNKWN LL MODE AWD/4WD - NG UNKWN NBS - NG UNKWN PDM E/R No indication - UNKWN Symptoms : Symptoms :	V UNKWN V — CAN CIRC 3 V UNKWN V UNKWN V UNKWN V UNKWN V UNKWN V VNKWN V VNKWN	UNKWN - UNKWN UNKWN -		Attach	UNKWN CAN CIRC 2 		UNKWN UNKWN	UNKWN	CAN CIRC CAN CAN CAN CAN CAN CAN CAN CAN CAN CA
AUTO DRIVE POS. No indication NG UNKWN Display control unit — CAN COMM CAN CIRC GCM No indication NG UNKWN LL MODE AWD/4WD — NG UNKWN BS — NG UNKWN PDM E/R No indication — UNKWN Symptoms :	I CAN CIRC 3 CAN CIRC 3 UNKWN UNKWN UNKWN UNKWN UNKWN	UNKWN UNKWN UNKWN		Attach	UNKWN CAN CIRC 2 UNKWN			 UNKWN 	CAN CIRC UNKWN — —
Display control unit — CAN COMM CAN CIRC ICM No indication NG UNKWN LL MODE AWD/4WD — NG UNKWN BS — NG UNKWN PDM E/R No indication — UNKWN 	1 CAN CIRC 3 V UNKWN UNKWN UNKWN UNKWN UNKWN VUNKWN	UNKWN UNKWN —		Attach	CAN CIRC 2	CAN CIRC 4	- — — UNKWN —		CAN CIRC
Image: CM No indication NG UNKWN LL MODE AWD/4WD - NG UNKWN BS - NG UNKWN PDM E/R No indication - UNKWN ymptoms : - VINKWN	UNKWN UNKWN UNKWN UNKWN			Attach	UNKWN		UNKWN —	UNKWN —	UNKWN
LL MODE AWD/4WD — NG UNKWN BS — NG UNKWN PDM E/R No indication — UNKWN 	UNKWN UNKWN UNKWN UNKWN			Attach	UNKWN		UNKWN —	UNKWN 	
NBS — NG UNKWN PDM E/R No indication — UNKWN Symptoms : Attach cop SELECT SY	UNKWN UNKWN Py of STEM			Attach	UNKWN			_	-
PDM E/R No indication – UNKWN Symptoms : Attach cop SELECT SY	UNKWN			Attach	UNKWN copy of		_		
ymptoms : Attach cop SELECT SY	py of /STEM			Attach	e copy of				
					SYSTEM				
CA	c N DIAG SU	Attach c display cor PPORT M	opy of ntrol unit IONITOR	check shee	et				

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CAN SYSTEM (TYPE 12)



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and differential lock control unit. Refer to <u>LAN-386</u>, "Circuit Check Between <u>TCM and Differential Lock Control Unit</u>".

						CAN DIAC	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Tranamit				Rec	eive diagn	osis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	—	UNKWN	-	-	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	—	_	_	-	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	—	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN ORC 3	-	-	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN			UNKWN	I	I	—	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	-	_	-	-	-	UNKWN	-
ABS	_	NG	UNKWN			UNKWN	_	-	-	UNKWN	-	_
IPDM E/R	No indication	—	UNKWN		_	_	_	UNKWN	_	_	_	_



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Check harness between differential lock control unit and driver seat control unit. Refer to <u>LAN-387, "Circuit</u> <u>Check Between Differential Lock Control Unit and Driver Seat Control Unit"</u>.

						CAN DIAC	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN		_	UNI	UNKWN	UNI
A/T	—	NG	UNKWN	UNKWN	_	_	UNKWN	—	-	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	-	-	-	-	-		UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	-	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN ORC 3	-	-	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 7
BCM	No indication	NG	UNKWN		_	_	UNKWN	_	_	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	_	_	-	-	-	UNKWN	-
ABS	_	NG	UNKWN			UNK	_	-	-	UNKWN	-	-
IPDM E/R	No indication	_	UNKWN		_	_	—	UNKWN	_	_	_	_



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Case 3

А Check harness between driver seat control unit and data link connector. Refer to LAN-388, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

						CAN DIAG	G SUPPOI	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	UNKWN	UNKWN	UNI
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	_	UNKWN	UNION	_
DIFF LOCK	-	NG	UNKWN	UNKWN	-	_	_	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	-	-	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN ORC 3	-	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	_	_	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	-	-	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNK	UNK	_	-	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN		_	_	_	UNKWN	_	_	_	_



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Check harness between data link connector and IPDM E/R. Refer to <u>LAN-388</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

						CAN DIA	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/I
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	UNKWN	UNKWN	UNK
A/T	_	NG	UNKWN	UNKWN	-	_	UNKWN	—	-	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	-	_	_	_	-	UNKIN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	_	
всм	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	
ALL MODE AWD/4WD	_	NG	UNKWN		UNK	_	_	_	-	-	UNKWN	-
ABS	_	NG	UNKWN		UNK	UNKWN	—	_	-	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_



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Case 5

Check ECM circuit. Refer to LAN-389, "ECM Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Tranomit				Rec	eive diagr	iosis			
	LIN SCICCI	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG		_	UNK	_	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	_	UNKWN	_	_	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNK	_	_	_	-	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	-	-	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN ORC 3	-	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	-	_	-	_	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	Ι	UNKWN	-
ABS	_	NG	UNKWN		UNKWN	UNKWN	_	_	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN		_	_	_	UNKWN	_	_	_	_



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Check TCM circuit. Refer to LAN-390, "TCM Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
	EW SOLCON	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	_		_	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	_	UNKWN	_	-		UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	_	-	-	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	-	-	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	_	_	—	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN		_	_	_	_	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNK	UNKWN	_	_	_	UNKWN	_	-
IPDM E/R	No indication	—	UNKWN	UNKWN	_	-	-	UNKWN	_	-	—	-
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Case 7

Check differential lock control unit circuit. Refer to LAN-390, "Differential Lock Control Unit Circuit Check".

						CAN DIAG	G SUPPOI	RT MNTR				
SELECT SYST	EM screen	Initial	Tranomit				Rec	eive diagn	iosis			
	LIN Sereen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	-	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKVN	_	_	_	_	_		UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	_	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	-	_	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNK	_	_	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_



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Check driver seat control unit circuit. Refer to LAN-391, "Driver Seat Control Unit Circuit Check" .

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						CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	—	UNKWN	_	_	UNKWN	UNKWN	-
DIFF LOCK	-	NG	UNKWN	UNKWN	_	—	_	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	_	CAN CIRC :
BCM	No indication	NG	UNKWN	UNKWN	_	1	UNKWN	_	_	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	_	_	-	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	UNKWN	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	-
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Case 9

Check combination meter circuit. Refer to LAN-391, "Combination Meter Circuit Check" .

						CAN DIAG	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagn	nosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNK	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	_	UNKWN	_	_	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	-	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	_	CAN CRC 5	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNK	-	_	-	-	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	_	_	-	_	Ι	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	UNKWN	_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_



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Check display control unit circuit. Refer to LAN-392, "Display Control Unit Circuit Check" .

			-			CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
	LIN Soreen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	—	-	UNKWN	—	-	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	—	_	_	_	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	-	_	-	-
Display control unit	_	CAN COMM		CAN CAC 3	_	-	CAN CAC 5	CAN CRC 2	CAN CRC 4	_	_	CAN CAC 7
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	—	_	_	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	UNKWN	_	_
IPDM E/R	I E/R No indication - UNKWN			UNKWN	_	_	_	UNKWN	_	_	_	_
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Case 11

Check BCM circuit. Refer to LAN-392, "BCM Circuit Check" .

						CAN DIAG	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	osis			
	LIN SOICCIT	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	_	UNKWN	_	_	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	—	_	-	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	_	CAN CIRC 5	CAN CRC 2	CAN CIRC 4	-	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	-	UNKWN	-	-	_	-	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	_	Ι	-	-	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	-	-	UNKWN	_	_
IPDM E/R	No indication – UNKW			UNKWN	_		_	UNKWN	_	_	_	



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Check data link connector circuit. Refer to LAN-393, "Data Link Connector Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
	Lin soreen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	_	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	—	_	_	_	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	_	_	—	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	—	_	_	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	UNKWN	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_
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Case 13

Check front air control circuit. Refer to LAN-393, "Front Air Control Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagn	osis			
	LIN SOFCER	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	_	UNKWN	_	_	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	_	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	-	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	_	CAN CIRC 5	CAN CIRC 2	CAN CRC 4	-	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	-	UNKWN	_	-	-	-	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	_	—	-		UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	-	UNKWN	_	_
IPDM E/R	No indication – UNKWN		UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_



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Check transfer control unit circuit. Refer to LAN-394, "Transfer Control Unit Circuit Check" .

			-			CAN DIA	G SUPPO	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
	LIN SOFCER	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	-	_	UNKWN	_	-	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	_	—	_	_	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	_	_	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	_	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	_	-	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNK	UNK	UNK	—	—	_	_	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	UNKWN	_	_
IPDM E/R	M E/R No indication - UNKWN		UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_
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Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-394</u>, "<u>ABS Actuator and Electric Unit</u> <u>(Control Unit) Circuit Check</u>".

						CAN DIA	G SUPPOI	RT MNTR				
	EM screen	Initial	Tropomit				Rec	eive diagr	osis			
SELECT STOT	LWSGCCH	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	-	UNKWN	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN	_	_	_	_	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	-	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	_	_	-	-	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	_	_	-	-	—		-
ABS	_	N			UNK	UNK	_	_	_		-	_
IPDM E/R	No indication -	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_



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Check IPDM E/R circuit. Refer to LAN-395, "IPDM E/R Circuit Check" .

						CAN DIA	G SUPPO	RT MNTR				
	EM screen	Initial	Tronomit				Rec	eive diagr	iosis			
SELECTION	LIVISCIECI	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/
ENGINE	_	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	_	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	_	—	_	_	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	-	UNKWN	UNKWN	_	_	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	-	
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	—	_	—	_	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	_	_	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	—	—	UNKWN	_	—	—	_



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Case 17

Check CAN communication circuit. Refer to LAN-396, "CAN Communication Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	iosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG		_	UNK	_	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	_	UNKWN	_	-	UNKWN	UNIOWN	-
DIFF LOCK	_	NG		UNKWN	—	_	_	_	-	UNKWN		-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	_	UNKWN	UNKWN	_	-	-	-
Display control unit	_	CAN COMM		CANORC 3	_	_	CANORC 5	CAN CAC 2	CAN CRC 4	-	-	CANORC 7
BCM	No indication	NG	UNKWN	UNKWN	_	_	UNKWN	_	-	-	_	UNKWN
ALL MODE AWD/4WD	_	NG		UNKWN		_	_	_	_	-	UNKWN	-
ABS	—	V		UNKWN	UNK	UNKWN	_	_	_	UNK	_	_
IPDM E/R	R No indication - UNKW			UNKWN	_	_	_	UNKWN	_	_	_	_

Case 18

G Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to LAN-396, "IPDM E/R Ignition Relay Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Tranamit				Rec	eive diagr	nosis			
	LIN Screen	diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG UNKWN		-		—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	_	UNKWN	_	_	UNKWN	UNKWN	-
DIFF LOCK	_	NG	UNKWN	UNKWN	-	_	-	-	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	_	UNKWN	UNKWN	_	-	-	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	_	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	-	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	_	UNKWN	-	-	-	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNK	_	_	-	_	_	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	_	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	—	UNKWN	_	_	_	_
												PKIA9476E

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Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-396, "IPDM E/R Ignition Relay Circuit Check" .

		1										
						CAN DIA	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	_	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN		_		UNKWN	I	-	UNK	UNKWN	_
DIFF LOCK	_	NG	UNKWN	UNKWN			_	Ι	_	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	—	UNKWN	UNKWN	-	-	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-		CAN CIRC 5	CAN CIRC 2	CAN CIRC 4		_	CAN CIRC 7
всм	No indication	NG	UNKWN	UNKWN	_	_	UNKWN		_		_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	—	-	—	-	UNKWN	—
ABS	_	NG	NG UNKWN		UNKWN	UNK	_	_	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	_	UNKWN	_	_	_	_
												PKIA9477E

Circuit Check Between TCM and Differential Lock Control Unit 1. CHECK CONNECTOR

UKS0020F

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12
 - (W), 11 (R). : Continuity should exist.
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)

: Continuity should exist.

OK or NG

- >> GO TO 3. OK NG
 - >> Repair harness.





OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-365, "Work Flow".
- NG >> Repair harness.

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SMJ harness connector

51J, 52J

SMJ

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CONNECTOR

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Circuit Check Between Driver Seat Control Unit and Data Link Connector

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37 and harness connector B69.
- Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).
 - 15 (W) 51J (W) 14 (R) - 52J (R)
- : Continuity should exist.

BAT

Harness connector

14 15

: Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

- 51J (W) 6 (W) 52J (R) - 14 (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-365, "Work Flow".

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-388





- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R)

: Approx. 108 - 132Ω

OK or NG

- OK >> Replace ECM.
- NG >> Repair harness between ECM and A/T assembly.



TCM Circuit Check

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1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- 2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



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Differential Lock Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of differential lock control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect differential lock control unit connector.
- 2. Check resistance between differential lock control unit harness connector B77 terminals 5 (W) and 4 (R).

5 (W) - 4 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace differential lock control unit.
- NG >> Repair harness between differential lock control unit and harness connector B75.



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Driver Seat Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side).
- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- 2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace driver seat control unit.
- NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-391

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



Display Control Unit Circuit Check

1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of display control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect display control unit connector.
- 2. Check resistance between display control unit harness connector M95 terminals 25 (W) and 26 (R).

25 (W) - 26 (R)

: Approx. 54 - 66Ω

OK or NG

OK >> Replace display control unit.

NG >> Repair harness between display control unit and data link connector.



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BCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-25, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

OK >> GO TO 2. NG >> Repair termina

G >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)



OK or NG

- OK >> Diagnose again. Refer to LAN-365, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.



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Front Air Control Circuit Check 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of front air control for damage, bend and loose connection (unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

- 1. Disconnect front air control connector.
- 2. Check resistance between front air control harness connector M50 terminals 34 (W) and 35 (R).

34 (W) - 35 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace front air control.
- NG >> Repair harness between front air control and data link connector.



Transfer Control Unit Circuit Check

1. CHECK CONNECTOR

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of transfer control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect transfer control unit connector.
- 2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).
 - 1 (W) 2 (R)

: **Approx. 54 - 66**Ω

OK or NG

- OK >> Replace transfer control unit.
- NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace ABS actuator and electric unit (control unit).
- NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



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IPDM E/R Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.
- ECM
- A/T assembly
- Differential lock control unit
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.

NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Continuity should not exist.

OK or NG

- OK >> GO TO 3.
- NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

- 6 (W) Ground
- 14 (R) Ground
- : Continuity should not exist.: Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to <u>LAN-397, "ECM/</u> <u>IPDM E/R INTERNAL CIRCUIT INSPECTION"</u>. NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to <u>PG-26, "IPDM E/R Power/Ground Circuit Inspection"</u>.
- Ignition power supply circuit. Refer to <u>PG-13</u>, "IGNITION POWER SUPPLY IGNITION SW. IN ON <u>AND/OR START</u>".

LAN-396

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[CAN]
Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle. .
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 122
IPDM E/R	39 - 40	100-132





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Revision: April 2004

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System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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Revision: April 2004

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Work Flow

1. When there are no indications of "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN	SELECT SYSTEM		
		ENGINE		
	CONSULT- II	A/T		
		ABS		
		AIR BAG		
	ENGINE	BCM		
	START (NISSAN BASED VHCL)	METER A/C AMP		
	START (RENAULT BASED VHCL)	merenveran		
	SUB MODE			
	LIGHT COPY	BACK LIGHT COPY	PKIA2093E	

Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "BCM", "ALL MODE AWD/4WD", "ABS" 2. and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DI	AG RESU	LTS	
(I)	WORK SUPPORT	DTC RESU	ULTS	TIME	
	SELF-DIAG RESULTS	CAN COMM	CIRCUIT	0	
	DATA MONITOR			+	
	DATA MONITOR (SPEC)				
	CAN DIAG SUPPORT MNTR				
	ACTIVE TEST			1	
				F.F.DATA	
	Scroll Down	ERASE	PF	RINT	
	BACK LIGHT COPY	MODE BACH	K LIGHT	COPY	DKIA8260E

Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "BCM", "ALL MODE AWD/4WD", 3. "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	CAI	N DIAG SUPPOR	RT MNTR		1
(Example)			ENGINE			1
	WORK SUPPORT		F	PRSNT		
	SELE-DIAG BESULTS	INITIAI	L DIAG	ок		
		TRANS	SMIT DIAG	ок		
	DATA MONITOR	TCM		ок		
	DATA MONITOB (SPEC)	VDC/T	CS/ABS	ок		
	BAIA MONITON (GI EO)	METER	R/M&A	ок		
	CAN DIAG SUPPORT MNTR	ICC	ι	JNKWN		1
		BCM/S	SEC	ок		1
	ACTIVE TEST	IPDM 8	E/R	ок		
		AWD/4	IWD/e4WD	UNKWN		
	Scroll Down	P	PRINT	Scroll Down		
	BACK LIGHT COPY	MODE	E BACK LIGH	IT COPY	PKI48343E	

- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to LAN-404, "CHECK SHEET" .
- 5. Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to LAN-404, "CHECK SHEET" .

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual. So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to LAN-406, "CHECK SHEET RESULTS (EXAMPLE)".

LAN-403

CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Check sheet table	•										
						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive	diagnosis			
	LW Sorcen	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	UNKWN	-
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	_	-	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	_	_	_

Symptoms :

Attach copy of SELECT SYSTEM Attach copy of SELECT SYSTEM

PKIA9140E



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to <u>LAN-418</u>, "Circuit Check Between TCM and <u>Data Link Connector</u>".

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			_
022201 0101		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN		_	UNK		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN		_
BCM	No indication	NG	UNKWN		_	UNKWN	—	-	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	_	_	_	-	UNKWN	_
ABS	_	NG	UNKWN			_	—	UNKWN	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_

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Case 2

Check harness between data link connector and IPDM E/R. Refer to <u>LAN-419, "Circuit Check Between Data</u> <u>A</u> <u>Link Connector and IPDM E/R"</u>.

						CAN DIA	G SUPPOF	RT MNTR				
SELECT SYST	EM screen	Initial	Tronomit				Receive of	diagnosis				
022201 0101	EW SCICCI	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	-	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		UNK			
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_		UNKWN	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—		-	_	UNKWN	
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	_	-	_	-	UNKWN	_	
ABS	—	NG	UNKWN			_	-	UNKWN	UNKWN	_	_	
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	



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Case 3

Check ECM circuit. Refer to LAN-420, "ECM Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR			
	EM screen	Initial	Tronomit				Receive	diagnosis			
	EW Screen	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	UNK	UNK	
A/T	_	NG	UNKWN		_	UNKWN	-	-	UNKWN	UNKWN	_
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	Ι	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	—	-	1	_	UNKWN	_
ABS	_	NG	UNKWN		UNKWN	_	-	UNKWN	UNKWN	—	_
IPDM E/R	No indication	_	UNKWN		_	—	UNKWN		-	_	_
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Case 4

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Check TCM circuit. Refer to LAN-421, "TCM Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive	diagnosis			
022201 0101	Lin corcon	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	-	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN		—	UNKWN	-	-	UNKWN		_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	-	UNKWN	_
ABS	_	NG	UNKWN	UNKWN		_	_	UNKWN	UNKWN	-	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_



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Case 5

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Check combination meter circuit. Refer to LAN-421, "Combination Meter Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	FM screen	Initial	Transmit				Receive	diagnosis			
OLLEOT OTOT	LINISOICCII	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE		NG	UNKWN		UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T		NG	UNKWN	UNKWN			-		UNKWN	UNKWN	
ВСМ	No indication	NG	UNKWN	UNKWN	—	UNKWN	-		-		UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	-	-		UNKWN	
ABS		NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	—	-
IPDM E/R	No indication	-	UNKWN	UNKWN			UNKWN		-	-	
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Case 6

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Check BCM circuit. Refer to LAN-422, "BCM Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Tronomit				Receive of	diagnosis			
	LWSCICCI	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN		_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN	
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	_	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	-	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	—	UNKWN	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	-	_



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Case 7

Check data link connector circuit. Refer to LAN-422, "Data Link Connector Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYSTE	FM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	-	-		UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	UNKWN	—	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	_	-	_	-



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Case 8

Check steering angle sensor circuit. Refer to LAN-423, "Steering Angle Sensor Circuit Check" .

			CAN DIAG SUPPORT MNTR										
SELECT SYST	FM screen	Initial	Tronomit				Receive of	diagnosis					
OLLEOT OT OT	LW SCICCH	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	UNKWN	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	-	-	_	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	_	_	-	UNKWN	_		
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	—		UNKWN	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_		



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Case 9

Check transfer control unit circuit. Refer to LAN-423, "Transfer Control Unit Circuit Check" .

	EM coroop	letitie l	Transarit	Receive diagnosis							
	LINISCIEET	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	_	_	-	-	UNKWN
ALL MODE AWD/4WD	_	NG			UNKWN	—	_	_	-		_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_



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Case 10

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-424</u>, "<u>ABS Actuator and Electric Unit</u> <u>(Control Unit) Circuit Check</u>".

			CAN DIAG SUPPORT MNTR								
SELECT SYST	FM screen	Initial	Transmit				Receive of	diagnosis			
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	_	-	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	-		_
ABS	_	V	UNIOWN			_	—	UNKWN	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_



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Case 11

Check IPDM E/R circuit. Refer to LAN-424, "IPDM E/R Circuit Check" .

			CAN DIAG SUPPORT MNTR											
SELECT SYST	FM screen	Initial	Tranomit				Receive of	diagnosis						
022201 0101		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN			
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	—	_	UNKWN	UNKWN	_			
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	_	_				
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	_	—	-	_	UNKWN	_			
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	—	UNKWN	UNKWN	_	_			
IPDM E/R	No indication	_	UNKWN	UNKWN	—	_	UNKWN	_	-	_	_			



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Case 12

Check CAN communication circuit. Refer to LAN-425, "CAN Communication Circuit Check" .

	CAN DIAG SUPPORT MNTR										
SELECT SYST	EM screen	Initial	Transmit				Receive of	diagnosis			
022201 0101	EW Screen	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNK	UNKWN	
A/T	_	NG	UNKWN		_	UNKWN	-	-	UNKWN	UNKWN	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	_	UNKWN
ALL MODE AWD/4WD	_	NG			UNKWN	_	-	_	-		_
ABS	_	V	UNKWN			_	-	UNKWN	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_

Case 13

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-426</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

			CAN DIAG SUPPORT MNTR										
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis									
022201 0101		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN	_		
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	_	UNKWN		
ALL MÖDE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	-		_		
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN		_		
IPDM E/R	No indication	_	UNKWN	UNKWN	—	—	UNKWN	_	-	-	—		

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Case 14

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-426, "IPDM E/R Ignition Relay Circuit Check" .

		CAN DIAG SUPPORT MNTR											
EM screen	Initial	Transmit				Receive of	diagnosis						
	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R			
]	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN			
]	NG	UNKWN		_	UNKWN	-	_		UNKWN	-			
No indication	NG	UNKWN	UNKWN	_	UNKWN	—		_	_	UNKWN			
	NG	UNKWN	UNKWN	UNKWN	_	-		_	UNKWN	-			
	NG	UNKWN		UNKWN	-	_	UNKWN	UNKWN	_	-			
No indication		UNKWN	UNKWN	_	_	UNKWN	-	_	_	- 1			
	EM screen No indication No indication	EM screen Initial diagnosis — NG — NG No indication NG — NG — NG No indication —	Initial Initial Initial Transmit diagnosis diagnosis — NG UNKWN — NG UNKWN No indication NG UNKWN — NG UNKWN — NG UNKWN Mo indication NG UNKWN UNKWN UNKWN UNKWN Mo indication — UNKWN	Initial diagnosis Transmit diagnosis Initial diagnosis ECM Initial diagnosis ECM Initial diagnosis ECM Initial diagnosis Initial diagnosis Initial diagnosi	Initial diagnosis Transmit diagnosis Initial diagnosis Transmit diagnosis Image: Initial diagnosis ECM Image: Initial diagnosis ECM Image: Initial diagnosis Image: Initial diagnosis Imag	CAN DIA Initial diagnosis Transmit diagnosis METER/M&A — NG UNKWN — UNKWN — NG UNKWN — UNKWN — NG UNKWN — UNKWN NG UNKWN UNKWN — UNKWN No indication NG UNKWN UNKWN — — NG UNKWN UNKWN — — NG UNKWN UNKWN — — NG UNKWN UNKWN — No indication — UNKWN UNKWN — No indication — UNKWN UNKWN —	CAN DIAG SUPPOR Initial diagnosis Transmit diagnosis ECM TCM METER/M&AA BCM/SEC — NG UNKWN — UNKWN UNKWN UNKWN UNKWN — NG UNKWN UNKWN UNKWN UNKWN — No indication NG UNKWN UNKWN — UNKWN — NG UNKWN UNKWN UNKWN — — — No indication NG UNKWN UNKWN — — No indication — UNKWN UNKWN — —	CAN DIAG SUPPORT MNTR Initial diagnosis Transmit diagnosis Receive diagnosis - NG UNKWN - METER/ M& BCM/SEC STRG - NG UNKWN - UNKWN UNKWN - - NG UNKWN UNKWN - - No indication NG UNKWN UNKWN - - - NG UNKWN UNKWN - - No indication - UNKWN UNKWN - - No indication - UNKWN UNKWN - -	CAN DIAG SUPPORT MNTR EM screen Initial diagnosis Transmit diagnosis METER/ ECM METER/ M&A BCM/SEC STRG AWD/4WD /e4WD - NG UNKWN - UNKWN UNKWN UNKWN - UNKWN - NG UNKWN UNKWN UNKWN UNKWN - UNKWN No indication NG UNKWN UNKWN - - - - - NG UNKWN UNKWN - UNKWN - - - - NG UNKWN UNKWN UNKWN - - - - - NG UNKWN UNKWN UNKWN - - - - - NG UNKWN UNKWN UNKWN - - - - No indication - UNKWN UNKWN - - - - No indication - UNKWN UNKWN - - - - No indication - UNKWN UNKWN	CAN DIAG SUPPORT MNTR EM screen Initial diagnosis Transmit diagnosis METER/ ECM METER/ M&A BCM/SEC STRG AWD/4WD //ABS VDC/TCS //ABS - NG UNKWN - UNKWN UNKWN UNKWN - UNKWN -<			

Circuit Check Between TCM and Data Link Connector 1. CHECK CONNECTOR

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1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E34
- Harness connector B40
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)

OK or NG

- OK >> GO TO 3. NG
- >> Repair harness.



: Continuity should exist.

: Continuity should exist.

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- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-419

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector M31.
- 2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).
 - 6 (W) 31G (W) 14 (R) - 42G (R)

OK or NG

OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- Check continuity between harness connector E152 terminals 2. 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).
 - 31G (W) 39 (W) 42G (R) - 40 (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-403, "Work Flow" .
- NG >> Repair harness.

ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check following terminals and connectors for damage, bend and loose connection (control module side 3. and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.



- : Continuity should exist.
- : Continuity should exist.



- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



BCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: **Approx. 54 - 66**Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-25</u>, "Removal and Installation of BCM".
- NG >> Repair harness between BCM and data link connector.



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Data Link Connector Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.



- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of transfer control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect transfer control unit connector.
- 2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace transfer control unit.
- NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

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1. Turn ignition switch OFF.

1. CHECK CONNECTOR

- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace ABS actuator and electric unit (control unit).
- NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.

IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.



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2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect IPDM E/R connector. 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R). BAT 39 (W) - 40 (R) : Approx. 108 - 132 Ω IPDM E/R connector OK or NG 4039 OK >> Replace IPDM E/R. NG >> Repair harness between IPDM E/R and harness connector E152. Ω **CAN Communication Circuit Check** 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. Disconnect the following module and control unit connectors and check terminals for deformation, discon-3. nection, looseness or damage. ECM A/T assembly Combination meter BCM Steering angle sensor Front air control Transfer control unit ABS actuator and electric unit (control unit) IPDM E/R OK or NG OK >> GO TO 2. NG >> Repair or replace as necessary. 2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Continuity should not exist.

OK or NG

- OK >> GO TO 3.
- NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

- 6 (W) Ground
- : Continuity should not exist.

14 (R) - Ground

: Continuity should not exist.

OK or NG

- OK >> Check ECM and IPDM E/R. Refer to LAN-426, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" .
- NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" . •
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START" .

Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	100 - 132





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System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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LAN-CAN-41



BKWA0166E

CAN SYSTEM (TYPE 14)



Work Flow

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1. When there are no indications of "AUTO DRIVE POS.", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN		SELECT SYSTEM	
			ENGINE	
	CONSULT- II		A/T	
			ABS	
			AIR BAG	
	ENGINE		ВСМ	
	START (NISSAN BASED VHCL)		METER A/C AMP	
	START (RENAULT BASED VHCL)	merenovorum	
	SUB MODE	-		
	LIGHT COPY		BACK LIGHT COPY	PKIA2093E

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESUL	TS
	WORK SUPPORT	DTC RESULTS	TIME
	SELF-DIAG RESULTS	CAN COMM CIRCUIT	0
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		F.	F.DATA
	Scroll Down	ERASE PRI	
	BACK LIGHT COPY	MODE BACK LIGHT	COPY PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.



- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-433</u>, "CHECK SHEET".
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWN" in the check sheet table. Refer to <u>LAN-433</u>, "CHECK SHEET".

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. According to the check sheet results (example), start inspection. Refer to <u>LAN-435</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)"</u>.
CHECK SHEET

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Check sheet table	•										
						CAN DIA	G SUPPOR	RT MNTR			
	EM screen	Initial	Tronomit				Receive	diagnosis			
OLLEOT OTOT	LIVISCICCI	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	_	_	_	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_

Symptoms :

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PKIA9142E

CAN SYSTEM (TYPE 14)



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-449, "Circuit Check Between TCM and Driver Seat Control Unit" .

						CAN DIA	G SUPPOF	T MNTR			
	EM screen	Initial	Transmit				Receive (diagnosis			
322201 3131	LWBURGH	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN		UNKWN	UNKWN	UNK
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-		UNKWN	UNKWN	_	_	_	_
BCM	No indication	NG	UNKWN		_	UNKWN	_	_	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	—	-		-	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN	_	_
IPDM E/R	No indication	-	UNKWN	UNIWN	_	_	UNKWN	_	-	_	_



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Case 2

Check harness between driver seat control unit and data link connector. Refer to <u>LAN-450</u>, "Circuit Check <u>Between Driver Seat Control Unit and Data Link Connector</u>".

						CAN DIA	G SUPPOF	T MNTR			
	EM screen	Initial	Transmit				Receive of	diagnosis			
322201 3131	LIVISCIECI	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNK	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	-		UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	—	-	_
BCM	No indication	NG	UNKWN		-	UNKWN	_	_	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	_	-	_	-	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNK	_	-	UNKWN	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNION	_	_	UNKWN	_	_	_	_



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Case 3

А Check harness between data link connector and IPDM E/R. Refer to LAN-451, "Circuit Check Between Data Link Connector and IPDM E/R".

						CAN DIA	G SUPPOF	RT MNTR			
	EM screen	Initial	Tranamit				Receive of	diagnosis			
0222010101	LINISCICCI	diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNK
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	-	UNKWN		_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_	-	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	_	
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	—	-	_	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN	_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_



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Case 4

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Check ECM circuit. Refer to LAN-452, "ECM Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Tronomit				Receive of	diagnosis			
0222010101		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNK	UNK	_	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	-	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN		UNKWN	—	-	_	-	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	-	-	UNKWN	_	-	_	_



CAN SYSTEM (TYPE 14)

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Case 5

Check TCM circuit. Refer to LAN-452, "TCM Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNK	UNKWN	UNKWN	-	_	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	—	_	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	-	UNKWN	—
ABS	_	NG	UNKWN	UNKWN		_	_	UNKWN	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_



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Case 6

Check driver seat control unit circuit. Refer to LAN-453, "Driver Seat Control Unit Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive of	diagnosis			
0222010101		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	_	UNKWN	_	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	-	_	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	UNKWN	_	-	_	_



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Case 7

Check combination meter circuit. Refer to LAN-453, "Combination Meter Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis	_		
011101010101		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNK	-	—	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	-	_
BCM	No indication	NG	UNKWN	UNKWN	_		—	-	—	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	-	_	_	_



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Case 8

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Check BCM circuit. Refer to LAN-454, "BCM Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive of	diagnosis			
022201 0101		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN		_	-	_	-
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	-	_	-	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	_	_
IPDM E/R	No indication	-	UNKWN	UNKWN	_	-	UNKWN	_	-	_	_



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Case 9

Check data link connector circuit. Refer to LAN-454, "Data Link Connector Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
0111010101		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	_	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	—	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	—	UNKWN	_	-	_	-



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Case 10

Check steering angle sensor circuit. Refer to LAN-455, "Steering Angle Sensor Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive of	diagnosis		VDC/TCS /ABS UNKWN UNKWN - UNKWN	
0222010101		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	_	—
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	-	_	-	UNKWN	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN	_	-
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	UNKWN	_	-	_	_



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Case 11

Check transfer control unit circuit. Refer to LAN-455, "Transfer Control Unit Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR			
SELECT SYST	EM screen	Initial	Transmit				Receive	diagnosis			
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	-	_	—
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNK	—	_	_	-	UNK	-
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	-
IPDM E/R	No indication	_	UNKWN	UNKWN	-	-	UNKWN	-	-	-	-



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Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to <u>LAN-456</u>, "ABS Actuator and Electric Unit (<u>Control Unit</u>) <u>Circuit Check</u>".

		CAN DIAG SUPPORT MNTR									
SELECT SYSTEM screen		Transmit				Receive (diagnosis				
		diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN	
—	NG	UNKWN	UNKWN	_	UNKWN	_	_	UNKWN	UNKWN	_	
No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	_	_	_	
No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	-	UNKWN	
—	NG	UNKWN	UNKWN	UNKWN	—	_	—	-	UNKWN	_	
—	N	UNKWN	UNKWN	UNK	_	_	UNIWN	UNKWN	_	_	
No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	-	_	
	EM screen No indication No indication No indication	EM screen Initial diagnosis	Initial diagnosis Transmit diagnosis Initial diagnosis Transmit diagnosis Initial diagnosis UNKWN NG UNKWN No indication NG UNKWN No indication NG UNKWN No indication NG UNKWN Initial diagnosis NG UNKWN No indication NG UNKWN Initial diagnosis UNKWN UNKWN Initial diagnosis UNKWN UNKWN	Initial Transmit Initial Transmit diagnosis ECM Initial UNKWN Image: Initial Image: Initial Initial Initin Initial	Initial diagnosis Transmit diagnosis EM screen Initial diagnosis Transmit diagnosis - NG UNKWN ECM TCM - NG UNKWN - UNKWN - NG UNKWN - UNKWN No indication NG UNKWN - UNKWN - NG UNKWN UNKWN - - NG UNKWN UNKWN - - NG UNKWN UNKWN - - NG UNKWN UNKWN UNKWN - NG UNKWN UNKWN - No indication - UNKWN UNKWN -	Initial diagnosis Transmit diagnosis ECM TCM METER/M&A - NG UNKWN - UNKWN UNKWN - NG UNKWN - UNKWN - NG UNKWN - UNKWN - NG UNKWN - UNKWN No indication NG UNKWN - UNKWN No indication NG UNKWN UNKWN - UNKWN - NG UNKWN UNKWN - UNKWN - NG UNKWN UNKWN - - No indication NG UNKWN UNKWN - - No indication - UNKWN UNKWN - - No indication - UNKWN UNKWN - -	CAN DIAG SUPPOR Transmit diagnosisInitial diagnosisTransmit diagnosisMETER/ ECMMETER/ M&ABCM/SEC-NGUNKWN-UNKWNUNKWNUNKWN-NGUNKWN-UNKWN-UNKWNNo indicationNGUNKWN-UNKWNNo indicationNGUNKWN-UNKWNNGUNKWNUNKWNNGUNKWNUNKWNUNKWNNGUNKWNUNKWNUNKWNNo indication-UNKWNUNKWNUNKWNNo indication-UNKWNUNKWNUNKWNNo indication-UNKWNUNKWNNo indication-UNKWNUNKWN	EM screen Transmit diagnosis Transmit diagnosis CAN DIAG SUPPORT MNTR Initial diagnosis Transmit diagnosis ECM TCM METER/M&A BCM/SEC STRG - NG UNKWN - UNKWN UNKWN UNKWN - - NG UNKWN - UNKWN - - No indication NG UNKWN - UNKWN - - No indication NG UNKWN UNKWN - - - No indication NG UNKWN UNKWN - - - - NG UNKWN UNKWN - - - No indication NG UNKWN UNKWN - - - - NG UNKWN UNKWN UNKWN - - - - NG UNKWN UNKWN UNKWN - - - - NG UNKWN UNKWN UNKWN - - UNKWN No indication <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>EM screen Transmit diagnosis Transmit diagnosis TCM METER/ MSRC STRG AWD/4WD VDC/TCS /ABS - NG UNKWN - UNKWN UNKWN UNKWN UNKWN UNKWN - UNKWN -<!--</td--></td>	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	EM screen Transmit diagnosis Transmit diagnosis TCM METER/ MSRC STRG AWD/4WD VDC/TCS /ABS - NG UNKWN - UNKWN UNKWN UNKWN UNKWN UNKWN - UNKWN - </td	





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Case 13

Check IPDM E/R circuit. Refer to LAN-456, "IPDM E/R Circuit Check" .

	CAN DIAG SUPPORT MNTR											
SELECT SYSTEM screen		Initial	Transmit	Receive diagnosis								
		diagnosis	diagnosis	ECM	ТСМ	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	UNKWN	UNKWN	UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	—	UNKWN	UNKWN	-	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	—	_	
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	—	—	—		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	—	_	UNKWN	—	
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN	_	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	-	_	UNKWN	-	-	_	_	



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Case 14

Check CAN communication circuit. Refer to LAN-457, "CAN Communication Circuit Check" .

			CAN DIAG SUPPORT MNTR										
SELECT SYSTEM screen		Initial	Transmit	Receive diagnosis									
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE	_	NG	UNKWN	_		UNKWN	UNKWN	_	UNKWN	UNKWN			
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	UNKWN	UNKWN	-		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	-	_		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	—	-	_	UNKWN		
ALL MODE AWD/4WD	_	NG			UNK	_	-	_	-	UNKWN	-		
ABS	_	N				_	_	UNKIN	UNKWN	_	-		
IPDM E/R	No indication	-	UNKWN	UNKWN	-	_	UNKWN	-	-	-	_		

Case 15

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Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to <u>LAN-457</u>, "IPDM E/R Ignition Relay <u>Circuit Check</u>".

			CAN DIAG SUPPORT MNTR										
SELECT SYSTEM screen	Initial	Tranemit		Receive diagnosis									
		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE		NG	UNKWN	—	UNK	UNKWN	UNKWN	_	UNKWN		UNKWN		
A/T	_	NG	UNKWN	UNKWN	—	UNKWN	-	_	UNKWN	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNK	UNKWN	UNKWN	_	_	_	_		
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	_	—	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNK	_	_	—	-	UNKWN	—		
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	UNKWN	_	-		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	—	UNKWN	_	-	_	-		
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Case 16

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to <u>LAN-457, "IPDM E/R Ignition Relay</u> <u>A</u> <u>Circuit Check"</u>.

			CAN DIAG SUPPORT MNTR								
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis							
SELECT OF OF EM SCIECH		diagnosis	diagnosis	ECM	тсм	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_		_	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	—	_
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	—	-	_	-	UNKWN	_
ABS	_	NG	UNKWN		UNKWN	-	-	UNKWN	UNK	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector and harness connector F33.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12
 - (W), 11 (R).
 - 3 (W) 12 (W)
 - 8 (R) 11 (R)
- OK or NG
- OK >> GO TO 3.
- NG >> Repair harness.



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: Continuity should exist.

: Continuity should exist.

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3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E50.
- Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).
 - 12 (W) 2 (W) 11 (R) - 1 (R)

: Continuity should exist.

: Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37.
- Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B37 terminals 15 (W), 14 (R).
 - 2 (W) 15 (W)
- : Continuity should exist.
- 1 (R) 14 (R)
- : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-432, "Work Flow".

NG >> Repair harness.



Circuit Check Between Driver Seat Control Unit and Data Link Connector 1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B69
- Harness connector M40

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B37 and harness connector B69.
- Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).
 - 15 (W) 51J (W) 14 (R) - 52J (R)

: Continuity should exist. : Continuity should exist.

OK or NG

OK	>> GO TO 3.
NG	>> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R). 51J (W) - 6 (W) : Continuity should exist. Data link connector 52J (R) - 14 (R) : Continuity should exist. 14 6 OK or NG SMJ harness connector O CONNECTOR 6, 14 SMJ OK >> Connect all the connectors and diagnose again. Refer to 51J, 52J LAN-432, "Work Flow" . Ω NG >> Repair harness. D PKIA6834E Circuit Check Between Data Link Connector and IPDM E/R UKS00240 Ε **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (connector side and 3. harness side). Harness connector M31 Harness connector E152 OK or NG Н OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect harness connector M31. 1. 2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G BAT (R). Data link connector LAN 6 (W) - 31G (W) : Continuity should exist. 14 14 (R) - 42G (R) : Continuity should exist. 6 SMJ harness connector 6, 14 SMJ O CONNECTOR OK or NG 31G, 42G OK >> GO TO 3. Ω NG >> Repair harness. Μ PKIA6835E 3. CHECK HARNESS FOR OPEN CIRCUIT Disconnect IPDM E/R connector. 1. Check continuity between harness connector E152 terminals 2. 31G (W), 42G (R) and IPDM E/R harness connector E122 termi-BAT nals 39 (W), 40 (R). IPDM E/R connector 31G (W) - 39 (W) : Continuity should exist. SMJ harness connector 40 39 42G (R) - 40 (R) : Continuity should exist. CONNECTOR SMJ OK or NG 31G, 42G 39, 40 OK >> Connect all the connectors and diagnose again. Refer to

NG >> Repair harness.

Revision: April 2004

PKIA8140E

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[CAN]



LAN-451

ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).
- ECM connector
- Harness connector E19
- Harness connector F33

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R)

: Approx. 108 - 132 Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between ECM and A/T assembly.



UKS00242

TCM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of A/T assembly for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect A/T assembly connector.
- Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace A/T assembly.
- NG >> Repair harness between A/T assembly and harness connector F33.



[CAN]

	[CAN]
Driver Seat Control Unit Circuit Check 1. CHECK CONNECTOR	UKS001WT
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection (control harness side). Driver seat control unit connector Harness connector P1 Harness connector B37 <u>DK or NG</u> OK >> GO TO 2. NG >> Repair terminal or connector. 	ol unit side and
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect driver seat control unit connector. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R). 	
3 (W) - 19 (R) : Approx. 54 - 66Ω DK or NG OK OK >> Replace driver seat control unit. NG >> Repair harness between driver seat control unit and harness connector B69.	PKIA6842E
Combination Meter Circuit Check 1. CHECK CONNECTOR	UKS00243
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage, bend and loose connect and harness side). 	ion (meter side

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect combination meter connector. 1.
- 2. Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R)

: **Approx. 54 - 66**Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



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BCM Circuit Check

1. CHECK CONNECTOR

- Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

OK or NG

1.

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-25, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Diagnose again. Refer to LAN-432, "Work Flow" .
- NG >> Repair harness between data link connector and combination meter.



[CAN]

UKS00245

[CAN]



ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace ABS actuator and electric unit (control unit).
- NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: Approx. 108 - 132 Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



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	[CAN]
C/ 1.	AN Communication Circuit Check UKS0024A CHECK CONNECTOR
1.	Turn ignition switch OFF.
2.	Disconnect the negative battery terminal.
3.	Disconnect the following module and control unit connectors and check terminals for deformation, discon- nection, looseness or damage.
_	ECM
_	A/T assembly
_	Driver seat control unit
_	Combination meter
_	BCM
-	Steering angle sensor
-	Front air control
-	Transfer control unit
-	ABS actuator and electric unit (control unit)
_	IPDM E/R
OK	Cor NG
O N	K >> GO TO 2. G >> Repair or replace as necessary.
2.	CHECK HARNESS FOR SHORT CIRCUIT

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14

6 (W) - Ground

6 (W) - 14 (R)

>> GO TO 3.

>> Repair harness.

- 14 (R) Ground
- : Continuity should not exist.

: Continuity should not exist.

- : Continuity should not exist.

OK or NG

(R).

OK or NG

OK

NG

OK >> Check ECM and IPDM E/R. Refer to LAN-458, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" . NG

>> Repair harness.



Data link connector

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UKS0024B

PKIA2077E

IPDM E/R Ignition Relay Circuit Check

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START"

LAN-457

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Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)	
ECM	94 - 86	108 - 122	
IPDM E/R	39 - 40	100 - 132	



CAN SYSTEM (TYPE 15)

System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Component Parts and Harness Connector Location



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PFP:23710

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UKS001X5

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CAN SYSTEM (TYPE 15)

Schematic

UKS001X6

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BKWA0168E



[CAN]



LAN-CAN-44



BKWA0170E

CAN SYSTEM (TYPE 15)

[CAN]



Work Flow

UKS001X8

[CAN]

1. When there are no indications of "AUTO DRIVE POS.", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".

(Example)	NISSAN		SELECT SYSTEM	
			ENGINE	
	CONSULT- II		A/T	
			ABS	
		ENGINE	AIR BAG	
	ENGINE		ВСМ	
	START (NISSAN BASED VHCL)		METER A/C AMP	
	START (RENAULT BASED VHCL)		mercrovovan	
	SUB MODE			
	LIGHT COPY		BACK LIGHT COPY	PKIA2093E

2. Print all the data of "SELF-DIAG RESULTS" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.

(Example)	SELECT DIAG MODE	SELF-DIAG RESUL	TS
(WORK SUPPORT	DTC RESULTS	TIME
	SELF-DIAG RESULTS	CAN COMM CIRCUIT	0
	DATA MONITOR		
	DATA MONITOR (SPEC)		
	CAN DIAG SUPPORT MNTR		
	ACTIVE TEST		
		F.	F.DATA
	Scroll Down	ERASE PR	
	BACK LIGHT COPY	MODE BACK LIGHT	COPY PKIA8260E

3. Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "AUTO DRIVE POS.", "BCM", "ALL MODE AWD/4WD", "ABS" and "IPDM E/R" displayed on CONSULT-II.



- 4. Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to <u>LAN-466, "CHECK SHEET"</u>.
- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG" or "UNKWN" in the check sheet table. Refer to <u>LAN-466, "CHECK SHEET"</u>.

NOTE:

- If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.
- The "CAN DIAG SUPPORT MNTR" items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
 So it is not necessary to check the status of the "CAN DIAG SUPPORT MNTR" items not in check sheet table.
- 6. Check CAN communication line of the navigation system. Refer to <u>AV-149</u>, "CAN Communication Line <u>Check"</u>.
- 7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to <u>LAN-466.</u> <u>"CHECK SHEET"</u>.

LAN-464

CAN SYSTEM (TYPE 15)

[CAN]	
Mark the "NG" or "UNKWN" item of the check sheet table with "v" from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to <u>LAN-466, "CHECK SHEET"</u> .	А
NOTE: If "NG" is displayed on "CAN COMM" as "CAN DIAG SUPPORT MONITOR" for the diagnosed control unit, replace the control unit. Refer to <u>AV-149, "CAN Communication Line Check"</u> .	В
According to the check sheet results (example), start inspection. Refer to <u>LAN-468, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u> .	
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CHECK SHEET

Revision: April 2004

NOTE:

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If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" for the diagnosed control unit, replace the control unit.

Uneck sheet table	;	1										
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	ECM	ТСМ	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	_	-	-	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	-	_	_
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 4		_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	_	_	-	-	_	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	-	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	_	UNKWN	_	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	-	-	_	_
		Attach copy of Attach copy of SELECT SYSTEM					л					
			CAN	N DIAG SU	Attach c display co JPPORT N	opy of ntrol unit IONITOR	check she	et				
vision: April 20	204				LAN-	-466						PKIA9144E

CAN SYSTEM (TYPE 15)



CHECK SHEET RESULTS (EXAMPLE)

NOTE:

If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" or "CAN COMM" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to <u>LAN-484, "Circuit Check Between TCM</u> and <u>Driver Seat Control Unit"</u>.

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	—	UNKWN	UNIWN	UNKWN	I	_	UNKWN	UNKWN	UNK	
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	UNK	UNKWN	—	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	Ι	-	_	_	—	
Display control unit	_	CAN COMM	CAN CIRC 1	CAN ARC 3	_	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 4	_	—	CAN CIRC 7	
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	-	—	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNIWN	—	I	I	_	-	UNKWN	—	
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	_	UNKWN	-	-	
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN		_	_	—	—	

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Case 2

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А Check harness between driver seat control unit and data link connector. Refer to LAN-485, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

						CAN DIA	SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNIOWN	UNKWN	_	-	UNKWN	UNKWN	UNKIVN
A/T	—	NG	UNKWN	UNKWN	-	UNKWN	-	—	-	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN ARC 3	-	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	_	CAN CIRC 7
ВСМ	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	-	_	-	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	_	_	_	_	UNKWN	-
ABS	_	NG	UNKWN		UNKWN	-	-	UNKWN	-	UNKWN	-	1
IPDM E/R	No indication	—	UNKWN	UNKWN	_	_	UNKWN	_	-	_	_	-



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Check harness between data link connector and IPDM E/R. Refer to <u>LAN-486</u>, "Circuit Check Between Data <u>Link Connector and IPDM E/R</u>".

						CAN DIA	G SUPPOR	RT MNTR				
	EM screen	Initial	Tranamit				Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	-	_			UNK
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	UNK	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	_	_	-
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	_	CANORC
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	-	_	-	UNI
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNI	—	—	—	_	_	UNKWN	—
ABS	_	NG	UNKWN		UNKWN	_	-	UNKWN	_	UNKWN	-	_
IPDM E/R	No indication	—	UNKWN	UNKWN		_	UNKWN	_	_	_	_	_



CAN SYSTEM (TYPE 15)

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Case 4

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Check ECM circuit. Refer to LAN-487, "ECM Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	iosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG		_	UNK	UNKWN	UNKWN	_	-		UNKWN	UNKIVN
A/T	_	NG	UNKWN	UNKWN	Ι	UNKWN	-	_	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	-	_	
Display control unit	_	CAN COMM	CAN CIRC 1	CANVIRC 3	_	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	I	UNKWN	Ι	—	-	-	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-		—	_	_	UNKWN	
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	-	UNKWN	-	UNKWN	-	
IPDM E/R	No indication	—	UNKWN	UNKWN	_	_	UNKWN	—	_	_	_	



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Check TCM circuit. Refer to LAN-487, "TCM Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	_		UNKWN	UNKWN	_	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	UNK	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	-	_	_	-
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	_	-	-	-	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN			—	-	-	_	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	—	UNKWN	-	UNKWN	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	-	-	_	_	_



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Case 6

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Check driver seat control unit circuit. Refer to LAN-488, "Driver Seat Control Unit Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	iosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	-	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	_	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	-	_	—
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	—	-	-	_	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN		—	-	_	_	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN		—	UNKWN	-	UNKWN	-	_
IPDM E/R	No indication	_	UNKWN	UNKWN	_	-	UNKWN	_	_	_	_	-



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Check combination meter circuit. Refer to LAN-488, "Combination Meter Circuit Check" .

						CAN DIA	G SUPPOI	RT MNTR				
	EM screen	Initial	Tranamit				Rec	eive diagr	nosis			
SELECT STOP	EW Sereen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/I
ENGINE	_	NG	UNKWN	-	UNKWN	UNK	UNKWN	—	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	_	_	UNKWN	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	-	_	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CRC 5	CAN CIRC 2	-	CAN CIRC 4	_	_	CAN CIRC
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	-	_	_	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	—	—	_	-	_	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	-	UNKWN	—	-
IPDM E/R	No indication	_	UNKWN	UNKWN		_	UNKWN	_	_	_	_	_



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Case 8

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Check display control unit circuit. Refer to LAN-489, "Display Control Unit Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	iosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	_	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	_	_	_	—
Display control unit	_	CAN COMM	CANORC 1	CANORC 3	-	CAN CRC 5	CAN CRC 2	-	CAN CRC 4	_	—	CAN CRC 7
BCM	No indication	NG	UNKWN	UNKWN	Ι	UNKWN	—	-	-	-	—	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	-	_	_	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	_	UNKWN	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	-



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Check BCM circuit. Refer to LAN-489, "BCM Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Tranamit				Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	_	_	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	_	-	_
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CRC 2	-	CAN CIRC 4	—	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	-	_	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	-	—	UNKWN	_
ABS	-	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	-	UNKWN	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	—	_		_	_	_	_	_



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Case 10

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Check data link connector circuit. Refer to LAN-490, "Data Link Connector Circuit Check" .

						CAN DIA	G SUPPOF	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	1	-	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	_	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	Ι	-	-	_	
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	Ι	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 4	_	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	—	-	_	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	١	_	I	_	_	UNKWN	
ABS	_	NG	UNKWN	UNKWN	UNKWN		—	UNKWN	_	UNKWN	-	-
IPDM E/R	No indication	—	UNKWN	UNKWN		-	UNKWN	_	_	_	_	-



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Check steering angle sensor circuit. Refer to LAN-490, "Steering Angle Sensor Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
	Liniboreen	diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	_	UNKWN	UNKWN	UNKWN
A/T	-	NG	UNKWN	UNKWN	Ι	UNKWN	-	-	_	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	-	_	—
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	_	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	—	—	-	-	-	UNKWN
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	_	_	_	_	_	UNKWN	—
ABS	-	NG	UNKWN	UNKWN	UNKWN	-	—	UNKWN	-	UNKWN	-	-
IPDM E/R	No indication	—	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	-



CAN SYSTEM (TYPE 15)

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Case 12

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Check front air control circuit. Refer to LAN-491, "Front Air Control Circuit Check" .

						CAN DIAC	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	osis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	-	_	UNKWN	UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	_	_	UNKWN	UNKWN	-
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_	_	_	—
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	_	CAN CRC 4	—	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	-	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	—	_	_	UNKWN	—
ABS	_	NG	UNKWN	UNKWN	UNKWN	_	_	UNKWN	—	UNKWN	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN	—	_	UNKWN	_	_	_	_	-



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Check transfer control unit circuit. Refer to LAN-491, "Transfer Control Unit Circuit Check" .

						CAN DIA	G SUPPOR	RT MNTR				
SELECT SYST	EM screen	Initial	Transmit				Rec	eive diagr	nosis			
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	I	-		UNKWN	UNKWN
A/T	_	NG	UNKWN	UNKWN	Ι	UNKWN	_	Ι	-	UNK	UNKWN	_
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	I	_	_		—
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	Ι	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 4	_	-	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	—	-	-	-	-	UNKWN
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	-	—	_	-	_	UNKWN	_
ABS	_	NG	UNKWN	UNKWN	UNKWN	-	—	UNKWN	-	UNKWN	-	-
IPDM E/R	No indication	_	UNKWN	UNKWN		_	UNKWN	-	_	_	-	_



Case 14

А Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-492, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

			CAN DIAG SUPPORT MNTR										
SELECT SYST	EM screen	Initial	Transmit		Receive diagnosis								
		diagnosis	diagnosis	ECM	тсм	M METER BCM STRG F			Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R	
ENGINE	_	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	_	_	UNKWN		UNKWN	
A/T	_	NG	UNKWN	UNKWN	_	UNKWN	-	_	-	UNKWN	UNKWN	_	
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	-	_	_	_	
Display control unit	_	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	_	CAN CIRC 7	
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	_	-	-	_	UNKWN	
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	_	_	-	-		_	
ABS	_	N			UNWN	-	-	UNKWN	_	UNKWN	-	_	
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	_	



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Check IPDM E/R circuit. Refer to LAN-492, "IPDM E/R Circuit Check" .

			CAN DIAG SUPPORT MNTR											
SELECT SYST	EM screen	Initial	Transmit		Receive diagnosis									
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE		NG	UNKWN	-		UNKWN	UNKWN			UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN		UNKWN	—	_	_	UNKWN	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN	_	UNKWN	UNKWN	UNKWN	_	_	_		_		
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	—			
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	—	_	_	-	-	UNK		
ALL MODE AWD/4WD	-	NG	UNKWN	UNKWN	UNKWN	_	—	_	_	_	UNKWN	_		
ABS	-	NG	UNKWN	UNKWN	UNKWN	_	—	UNKWN	_	UNKWN	—	_		
IPDM E/R	No indication	_	UNKWN	UNKWN			UNKWN	_	_	_	_	-		



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Case 16

Check CAN communication circuit. Refer to LAN-493, "CAN Communication Circuit Check" .

		CAN DIAG SUPPORT MNTR												
SELECT SYST	EM screen	Initial	Transmit		Receive diagnosis									
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE	—	NG	UNKWN			UNKWN	UNKWN	_	-			UNKOVN		
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	-	-	UNK	UNKWN	-		
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	-	-	_	-		
Display control unit	_	CAN COMM	CAN CRC 1	CAN CRC 3	-	CAN CRC 5	CAN CRC 2	-	CAN CRC 4	_	-	CANCRC 7		
BCM	No indication	NG	UNKWN	UNKWN	_	UNKWN	-	-	_	_	-	UNKWN		
ALL MODE AWD/4WD	-	NG		UNKWN	UNI	_	_	_	-	_	UNKWN	-		
ABS	_	N	UNKWN	UNKWN	UNKWN	_	-	UNKWN	_		-	-		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	_	_	_	_	—		

Case 17

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to LAN-493, "IPDM E/R Ignition Relay Circuit Check" .

			CAN DIAG SUPPORT MNTR											
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis										
SELLOT STOTEM SCIENT		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/F		
ENGINE	_	NG	UNKWN	_	UNK	UNKWN	UNKWN	-	-	UNKWN	UNKWN	UNKWN		
A/T	_	NG	UNKWN	UNKWN	-	UNKWN	-	_	_	UNKWN	UNKWN	-		
AUTO DRIVE POS.	No indication	NG	UNKWN	-	UNKWN	UNKWN	UNKWN	_	_	-	-	-		
Display control unit	-	CAN COMM	CAN CIRC 1	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 2	-	CAN CIRC 4	—	-	CAN CIRC 7		
BCM	No indication	NG	UNKWN	UNKWN	-	UNKWN	-	-	_	-	-	UNKWN		
ALL MODE AWD/4WD	_	NG	UNKWN	UNKWN	UNKWN	_	—	_	_	—	UNKWN	_		
ABS	_	NG	UNKWN	UNKWN	UNKWN	—	-	UNKWN	_	UNKWN	-	-		
IPDM E/R	No indication	_	UNKWN	UNKWN	_	_	UNKWN	-	_	_	_	_		

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Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to LAN-493, "IPDM E/R Ignition Relay Circuit Check" .

			CAN DIAG SUPPORT MNTR											
SELECT SYST	EM screen	Initial	Transmit	Receive diagnosis										
		diagnosis	diagnosis	ECM	тсм	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R		
ENGINE		NG	UNKWN		UNKWN	UNKWN	UNKWN	_	-	UNKWN	UNKWN	UNKWN		
A/T	-	NG	UNKWN	UNKWN			—	_	-	UNKWN	UNKWN	_		
AUTO DRIVE POS.	No indication	NG	UNKWN		UNKWN	UNKWN	UNKWN	_	_	_	_			
Display control unit		CAN COMM	CAN CIRC 1	CAN CIRC 3		CAN CIRC 5	CAN CIRC 2	_	CAN CIRC 4	_	_	CAN CIRC 7		
ВСМ	No indication	NG	UNKWN	UNKWN		UNKWN	_	_	-	_	_	UNKWN		
ALL MODE AWD/4WD		NG	UNKWN	UNKWN	UNKWN	_	_	_	-	_	UNKWN			
ABS		NG	UNKWN	UNK	UNKWN	-	_	UNKWN	-	UNKWN	_			
IPDM E/R	No indication	_	UNKWN	UNKWN		_	UNKWN	_	_	_	_	_		
IPDM E/R	No indication	_	UNKWN	UNKWN		_	UNKWN	_		_	_			

Circuit Check Between TCM and Driver Seat Control Unit 1. CHECK CONNECTOR

UKS0024E

PKIA9238E

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect A/T assembly connector and harness connector F33. 1.
- 2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12
 - (W), 11 (R). 3 (W) - 12 (W)
 - 8 (R) 11 (R)

: Continuity should exist. : Continuity should exist.

OK or NG

- OK >> GO TO 3. NG
 - >> Repair harness.

BA A/T assembly connector Harness connector 3 1112 8 3, 8 12, 11 Ω PKIA6831E



LAN-485

NG >> Repair harness.

PKIA9744F

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

- 51J (W) 6 (W) 52J (R) - 14 (R)
- : Continuity should exist. : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to LAN-464, "Work Flow".
- NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

1. CHECK CONNECTOR

UKS0024G

[CAN]

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector M31.
- Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).
 - 6 (W) 31G (W) 14 (R) - 42G (R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).
 - 31G (W) 39 (W) 42G (R) - 40 (R)

: Continuity should exist.

: Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-464, "Work Flow".

NG >> Repair harness.



CAN SYSTEM (TYPE 15)

ECM Circuit Check 1. CHECK CONNECTOR	UKS0024H
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connectors for damage, bend and loose connection 	(control module side
and harness side). - ECM connector - Harness connector E19 - Harness connector F33	
<u>OK or NG</u> OK >> GO TO 2. NG >> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect ECM connector. Check resistance between ECM harness connector E16 termi- pals 94 (W) and 86 (R) 	
94 (W) - 86 (R) : Approx. 108 - 132Ω OK or NG ECM of the second secon	connector
OK >> Replace ECM. NG >> Repair harness between ECM and A/T assembly.	94
TCM Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal.	UK\$00241
 Check terminals and connector of A/T assembly for damage, bend and loose connects side and harness side). <u>OK or NG</u> 	tion (control module
OK>> GO TO 2.NG>> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect A/T assembly connector. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R). 	
OK or NG OK >> Replace A/T assembly. NG >> Repair harness between A/T assembly and harness connector F33.	Ω SKIA6866E

Driver Seat Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connectors for damage, bend and loose connection (control unit side and harness side).
- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect driver seat control unit connector.
- Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace driver seat control unit.
- NG >> Repair harness between driver seat control unit and harness connector B69.



UKS0024J

Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R)

: Approx. 54 - 66 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between combination meter and data link connector.



[CAN]

CAN SYSTEM (TYPE 15)

Display Control Unit Circuit Check UK\$0024K **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 3. Check terminals and connector of display control unit for damage, bend and loose connection (control unit side and harness side). OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect display control unit connector. 1. 2. Check resistance between display control unit harness connector M95 terminals 25 (W) and 26 (R). BAT 25 (W) - 26 (R) : Approx. 54 - 66 Ω Display control unit connector OK or NG OK >> Replace display control unit. NG >> Repair harness between display control unit and data link connector. Ω SKIA6884E BCM Circuit Check UKS0024L 1. CHECK CONNECTOR Turn ignition switch OFF. 1. Disconnect the negative battery terminal.

3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

LAN-489

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).
 - 39 (W) 40 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace BCM. Refer to <u>BCS-25, "Removal and Installa-</u> tion of <u>BCM"</u>.
- NG >> Repair harness between BCM and data link connector.





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Data Link Connector Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check the terminals and connector of data link connector for damage, bend and loose connection (connector side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: **Approx. 54 - 66**Ω

OK or NG

- OK >> Diagnose again. Refer to <u>LAN-464, "Work Flow"</u>.
- NG >> Repair harness between data link connector and combination meter.



Steering Angle Sensor Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of steering angle sensor for damage, bend and loose connection (sensor side and harness side).

OK or NG

- OK >> GO TO 2.
- NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M47 terminals 3 (W) and 4 (R).

3 (W) - 4 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace steering angle sensor.
- NG >> Repair harness between steering angle sensor and data link connector.



Revision: April 2004

UKS0024M

UKS0024N

[CAN]

CAN SYSTEM (TYPE 15)

Front Air Control Circuit Check

1. CHECK CONNECTOR

Transfer control unit c

LAN-491

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1. Turn ignition switch OFF.	В
 Check terminals and connector of front air control for damage, bend and loose connection (unit side and 	_
harness side).	C
	C
NG >> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	D
1. Disconnect front air control connector.	F
 Check resistance between front air control harness connector M50 terminals 34 (W) and 35 (R). 	
34 (W) - 35 (R) : Approx. 54 - 66Ω	F
OK or NG OK >> Replace front air control. NG >> Repair harness between front air control and data link connector.	G
	Н
1. CHECK CONNECTOR	I
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of transfer control unit for damage, bend and loose connection (control unit side and harness side). 	J
OK or NG	LAN
OK >> GO TO 2. NG >> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	L
1. Disconnect transfer control unit connector.	р. /
 Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R). 	IVI
1 (W) - 2 (R) : Approx. 54 - 66Ω Transfer control unit connector	
OK or NG OK →> Replace transfer control unit. NG →> Repair harness between transfer control unit and harness connector E152.	

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ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R)

: Approx. 54 - 66Ω

OK or NG

- OK >> Replace ABS actuator and electric unit (control unit).
- NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E152.



IPDM E/R Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect IPDM E/R connector.
- 2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R)

: **Approx. 108 - 132**Ω

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness between IPDM E/R and harness connector E152.



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[CAN]

		[CAN]
С/ 1.	AN Communication Circuit Check	UKS00245
1.	Turn ignition switch OFF.	
2.	Disconnect the negative battery terminal.	
3.	Disconnect the following module and control unit connectors and check terminals for deformation nection, looseness or damage.	n, discon-
-	ECM	
_	A/T assembly	
-	Driver seat control unit	
_	Combination meter	
_	Display control unit	
_	BCM	
_	Steering angle sensor	
_	Front air control	
_	Transfer control unit	
_	ABS actuator and electric unit (control unit)	
_	IPDM E/R	
OK	<u>K or NG</u>	
0	0K >> GO TO 2.	
Ν	IG >> Repair or replace as necessary.	
2		

∠. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R)

: Continuity should not exist.

OK or NG

OK >> GO TO 3. NG >> Repair harness.



3. CHECK HARNESS FOR SHORT CIRCUIT

IPDM E/R Ignition Relay Circuit Check

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

- 6 (W) Ground
- 14 (R) Ground

: Continuity should not exist. : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-494, "ECM/ IPDM E/R INTERNAL CIRCUIT INSPECTION" . NG >> Repair harness.



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Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY IGNITION SW. IN ON AND/OR START" .

LAN-493

Component Inspection ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 122
IPDM E/R	39 - 40	100 - 132



[CAN]